AN ABRIDGEMENT OF Baron VAN SWIETEN'S Commentaries UPON THE APHORISMS OF THE CELEBRATED Dr. HERMAN BOERHAAVE,

Late Profeſſor of Phyſic, &c. in the Univerſity of LEYDEN.

CONCERNING

The KNOWLEDGE and CURE of DISEASES.

By COLIN HOSSACK, M. D.
OF COLCHESTER,
Phyſician to his late Royal Highneſs FREDERICK PRINCE of WALES.

Quidquid præcipies, eſto brevis; ut cito dicta
Percipiant animi dociles, teneantque fideles.
HORAT.

IN FIVE VOLUMES.

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BRITISH MUSEUM

THE

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OF THE

FOURTH VOLUME.

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ERRATA.

Page	Line	
9.	5.	for *vents*, read *prevents*.
97.	9.	dele *and*.
108.	17.	after *chylopoietic*, add *viscera*.
110.		Aph. 1232. for *renewing*, read *removing*.
		Ibid. for *impending*, read *impeding*.
130.	27.	after *indeed*, read *seen*.
195.	20.	for *united*, read *untied*.
202.	ult.	for *as*, read *and*.

AN

ABRIDGEMENT

OF

Baron VAN SWIETEN's Commentaries

UPON THE

APHORISMS

OF

Dr. HERMAN BOERHAAVE.

CONCERNING THE

KNOWLEDGE and CURE of DISEASES.

Of a PHTHISIS PULMONALIS, or PULMONARY CONSUMPTION.

APHORISM MCXCVI.

IF an ulcer has ſo far eat through the ſubſtance of the lungs, as that the whole habit of the body is thereby waſted and conſumed, the patient is ſaid to labour under a *phthiſis pulmonalis*, or a *pulmonary conſumption*.

A phthiſis is a waſting of the whole body from a purulent matter: ſuch a waſting may likewiſe ariſe from collections of pus in various parts of the body; for which we add here the word *pulmonalis*, both becauſe it is more frequent than the others, and be-

cauſe it often happens that the lungs are at laſt affected, although the diſeaſe firſt took its riſe from pus collected in ſome other part of the body. Three things are therefore required to conſtitute a phthiſis pulmonalis; 1. A ſlow waſting of the whole body. 2. A corruption of the humours by a putrid cacochymy. And 3dly. The ſeat of the diſorder muſt be in the lungs. For in a catarrh, matter is diſcharged from the noſe, and ſpit up by coughing, which reſembles pus both in colour, thickneſs, and other qualities; but the patient is not ſaid to have a phthiſis, becauſe the body is not waſted, nor are there any ſymptoms of a putrid cacochymy. But yet, if the matter of the catarrh be very acrid, or the cough violent and of long continuance, the lungs may be corroded, and an ulcer formed, and thus a phthiſis pulmonalis produced from a catarrh.

APH. MCXCVII.

SUCH an ulcer may be produced by any cauſe capable of ſtopping the circulation through the lungs, ſo as to convert the blood into purulent matter.

This is evident from the definition of a phthiſis pulmonalis juſt given.

APH. MCXCVIII.

THESE cauſes may be reduced, 1. To that peculiar conſtitution of body, which diſpoſes the perſon firſt to an hæmoptöe, and then to an ulcer of the corroded part.

A pulmonary conſumption frequently follows an hæmoptöe, but it has alſo been obſerved without one.

one. An hæmoptöe is a diſcharge of blood from the lungs with a cough, and a ſort of rattling in the breaſt; but *Celſus* gives this name to every diſcharge of blood from the mouth, whether from the gums, fauces, or noſtrils. *Aretæus* and others make nicer diſtinctions. But as a different prognoſis ariſes, when the blood comes from theſe parts, and when it comes from the lungs, the phyſician muſt be careful to make the neceſſary diſtinctions; and indeed great attention is neceſſary here.

If blood be brought out with a cough, it is eſteemed an almoſt certain ſign that it comes from the lungs, although this ſymptom may deceive. I was called to a young man, who was ſeized with a bleeding at the noſe in his ſleep; and as he lay with his head bent back, the blood falling through the foramina of the noſtrils into the fauces, excited a cough.—I directed him to waſh his mouth with warm water, and to ſit up in bed, with his head bent forwards.—Hereupon a violent bleeding at the noſe began, but without any cough or ſpitting of blood.

The ancient phyſicians wiſely obſerve, that there are three ways by which blood may flow from the veſſels of the lungs, and cauſe an hæmoptöe. 1. By a rupture of the veſſels from ſome external violence, which they called ῥῆξις. 2. By the acrimony of the fluids, corroding the veſſels, and this they called διάβρωσις. 3. By a dilatation of the extreme orifices of the veſſels, which they termed ἀναστόμωσις. But as both the prognoſtic and the cure are different in theſe three kinds of an hæmoptöe, it will be neceſſary to ſpeak of the diagnoſtics of each.

An hæmoptöe from the firſt cauſe may be eaſily known. Thus, if a perſon ſpits blood immediately after a fall, a blow, lifting a great weight, &c. we conclude that the hæmoptöe ariſes from a rupture of the veſſels. But when it ariſes from an eroſion of the veſſels the cure will be more difficult; for as *Aretæus* obſerves, "in this caſe an ulcer is produced,

" not a wound." An hæmoptöe from this cauſe may be known from a continual tickling cough, a pain in the inſide of the thorax, from the ſmall quantity of blood that is ſpit out, but almoſt continually, and from the frequent return of the ſpitting: and *Bennet* [a] laid it down as a prognoſtic rule, that blood ſpit drop by drop, ſhews the veſſels are corroded.

An hæmoptöe from an anaſtamoſis, or dilatation of the mouths of the veſſels, is far leſs dangerous, for the veſſels, although dilated, are ſtill entire, and the fluids healthy. *Aretæus* [b] remarks, that this kind of hæmoptöe happens to women whoſe menſes are ſuppreſſed, and that it comes on at the time when the menſtrual diſcharge ſhould return.—But as an hæmoptöe does not end in a phthiſis, unleſs it produces an ulcer in the lungs, we ſhall now conſider how this is formed.

An hæmoptöe from a rupture of the veſſels, is a true wound, and is attended with all the circumſtances of one. See Aph. 158. N° 1. For unleſs a large veſſel is burſt, which pours out a great quantity of blood at once, the hæmoptöe begins with a ſpitting of but little blood, but the quantity ſoon increaſes, and afterwards decreaſes again; and if the patient keeps quiet, generally ceaſes ſoon, but ſo as that a thin ſpittle tinged with red, is ſpit out.—As in an external wound, the lips grow red, painful and ſwell, and a ſlight fever comes on if the wound be conſiderable; thus it happens alſo to the lungs; for a cough ariſes, and ſometimes a ſlight pain. After this, as pus appears in a wound, ſo here does purulent matter, which in a ſmall quantity, forebodes no harm, for by this pus the ruptured veſſels heal, as we ſee in external wounds. But when larger branches of the veſſels are ruptured, the wound will enlarge more, a greater quantity of pus will be formed, and

[a] Pag. 106. Tabed. Theat.

[b] De Cauſa ſing. Morb. acut. Lib. xi. pag. 15.

there will be danger, that the ſuppuration begun about the lips of the wound, ſhould be ſpread through the ſubſtance of the lungs, and cauſe a pulmonary conſumption.

But there is another reaſon, why an ulcer of the lungs ſhould follow an hæmoptöe, namely, the cellular fabric of this viſcus; for blood collected in the cellular membrane of the lungs cannot find an exit this way, but by firſt eroding the adjacent bronchia. Beſides, blood thrown upon this membrane may by ſtagnation, grow putrid and acrid, and cauſe a ſuppuration and ulcer of the lungs. All which ſeem to be confirmed by the obſervations of *Hippocrates*, when he enumerates the cauſes from whence matter may be formed in the lungs. De Morb. lib. 1.

But worſe conſequences are to be feared from an hæmoptöe ariſing from an eroſion, than from a ſimple rupture of the veſſels; for if the cloſing of a veſſel broke by ſome violent cauſe be difficult, how much more is to be feared, where the eroſion has produced, not a wound, but an ulcer alſo! *Galen* deſpaired of curing a Phthiſis from this cauſe.

An hæmoptöe from an anaſtomoſis, that is, a dilatation of the mouths of the veſſels, is the moſt eaſily cured of any; becauſe it implies no acrimony of the humours, and the veſſels although dilated, remain entire. From the very effuſion of the blood a conſtriction of the veſſels will enſue. The only ill conſequence to be feared, is, that the blood thus diſcharged by an anaſtomoſis, ſhould lodge in the cellular ſubſtance of the lungs, and by being there confined, ſhould become putrid and produce an ulcer. But as a phthiſis is a diſeaſe ſo frequent, and ſo difficult to cure, it will be neceſſary to conſider accurately all thoſe ſigns which ſhew that a perſon is inclined to this diſeaſe, and alſo to enumerate the principal cauſes which produce an hæmoptöe and phthiſis.

This diſpoſition conſiſts, 1. In a tenderneſs of the arterial veſſels, and in the impetus of the blood rendered ſome way or other acrid. This is known by the viſible ſlenderneſs of the veſſels, and of the whole body; by the length of the neck; by a flat and narrow cheſt; depreſſed ſhoulders; by a very florid, thin, diſſolved, acrid, and hot blood; by a very fair and roſy complexion; and a tranſparent ſkin; a chearfulneſs of temper, and an early acuteneſs of genius and underſtanding.

The firmneſs of the veſſels reſiſts the fluids impelled into them; the greater therefore the ſtrength of the veſſels, the leſs danger will there be of their burſting:—but the greater the impetus of the blood through the veſſels is, the greater force will be put upon them.—If then an acrimony of the fluids be joined to an impetuous circulation, and a debility of the veſſels, there will be ſtill greater danger of a rupture. Sydenham has obſerved, that perſons of a warm conſtitution, but not robuſt, are moſt liable to an hæmoptöe. Blood taken from the vein of ſuch people, appears of a beautiful red colour, but the craſſamentum is more looſe, the ſerum ſalter, thinner, and leſs high-coloured than in common healthy blood: hence the fine complexion, and the roſy colour in the cheeks.—*Bennet* conſidered, a flat and ſtrait breaſt, a ſlender long neck, and prominent ſhoulders as prognoſtics of a phthiſis.

2. In that weakneſs of the viſcera, by which tenacious aliments are liable to form obſtructions, to turn putrid and acrimonious, and by theſe ill qualities to ulcerate the lungs after an hæmoptöe. This weakneſs of the veſſels is known

known by a ſlight fever, a dry cough, great heat, a redneſs of the lips, face, and cheeks, apparently increaſing when freſh chyle gets into the blood, a propenſity to ſweat during ſleep, a weakneſs, and a difficulty of breathing upon the leaſt motion.

It is evident from phyſiology, that many of the viſcera are employed in changing the crude aliment into the nature of our fluids, every one of which performs the reſpective function allotted to it. When therefore the viſcera, by their weakneſs, are unequal to their offices, the fluids ſecreted from them, muſt degenerate from their natural qualites, the chyle will be crude, viſcid, and even acrid: for, unleſs the aliments can be ſubdued by the chylopoïetic power of the viſcera, they will follow their own nature, and degenerate into an acid, putrid, or rancid acrimony, or even into a tough glue, according to the different ſubſtances of which they are compoſed.—Now the lungs are more liable to be affected by this fault in the humours, and ſooner than the other viſcera, becauſe ſuch a vitiated chyle, as ſoon as it mixes with the blood in the ſubclavian vein, muſt immediately paſs through the lungs, which therefore will receive the firſt injury of this degeneracy of the humours.

The chyle may hurt by its viſcidity, eſpecially if the aliment be ſuch as abound with a kind of tough glue; ſuch are all unfermented farinaceous ſubſtances, ſtrong broths, eſpecially thoſe made from the feet of animals. For theſe viſcid juices ſtuff up the narrow extremities of the pulmonary veſſels, and of courſe, occaſion obſtructions, but certainly, theſe may alſo, by ſtagnation, and the heat of the parts, acquire a great degree of acrimony, and produce a ſlight fever. But the lungs being irritated by the acrid chyle which flows through them together with the blood, a dry cough enſues, becauſe, there is as

yet no matter formed; and as the chyle is vitiated, there can be no nutrition, and the ſtrength of the body will gradually decay.—At the ſame time, when freſh chyle mixes with the blood, the circulation through the lungs is difficult, hence ariſes a greater heat, and fullneſs in the blood veſſels of the head, redneſs of the cheeks, &c.—A difficult breathing upon the leaſt motion is partly owing to great weakneſs, and partly to the courſe of the blood through the lungs being impeded.

3. That age in which, the veſſels having acquired their full growth, reſiſt any farther elongation, while in the mean time, the quantity, acrimony, and motion of the blood, are increaſed: this age is from the ſixteenth to the thirty-ſixth year of the patient's age.

It is evident, that the increaſe of ſtature depends upon the elongation of the veſſels, by the impetus of the fluid propelled through them; ſo that during thoſe ſtages of life, the growth is ſometimes very rapid. But when man arrives at that age, which will not ſuffer the veſſels to be farther ſtretched in length by the force of the impelled fluids, their ſides are more diſtended, and the blood urges with greater force on the extremities of the veſſels. Hence it is, that bleedings at the noſe ſo frequently happen to young perſons, either by a dilatation of the mouths of the veſſels, or by a rupture of them, if the impetus of the blood be ſuddenly augmented, or if there be a plethora. Beſides, about this age there ſeems to be alſo a greater acrimony of the humours. If therefore young perſons live high, drink wine, and uſe violent exerciſe, &c. there is danger, leſt the fluids increaſed in quantity rendered more acrid, and circulated with greater impetuoſity, ſhould burſt the veſſels, thoſe eſpecially of the lungs. It is true,

that

that about this time of life a ſalutary bleeding at the noſe frequently happens, and *Bennet*[a], who was an accurate obſerver of every circumſtance that relates to this diſeaſe, affirms, that it frequently vents a phthiſis, or at leaſt prolongs the life of the patient, which he confirms in another place[b] by the caſe of a youth who had received a conſumptive habit from his parents, but nevertheleſs was reſtored to health by a ſalutary bleeding from the noſe.—But although an hæmoptöe may happen in every ſtage of life, yet it is certain, that it moſt frequently occurs between early youth and manhood; for after thirty-five, when the veſſels are ſtrong, and the impetuoſity of youth cools, there is leſs reaſon to fear an hæmoptöe.

4. In an hereditary diſpoſition, conſult what was ſaid at Aph. 24, 26, 29, 38, 39, 40, to 44, 48, 60, 61, 64, 69, 72, 82, 84, 86, 100, 106; for all theſe being compared with what has been now ſaid, explain, define, and preſage the nature, cauſe, and effects of an hæmoptöe.

For by this means we ſhall better comprehend the cauſes of this diſeaſe, and with greater clearneſs determine what is to be hoped or feared from it. For inſtance, if in a plethoric ſubject, an hæmoptöe comes on, either from an anaſtamoſis, or a rupture of the veſſels, we may hope to cure it, as it is eaſy to remove the plethora by bleeding; on the contrary, if it ariſes from a weakneſs of the veſſels, and the humours be acrid, there is then great fear of a conſumption, or that the diſeaſe will prove fatal, if an hæmoptöe enſues; theſe cauſes can neither ſo ſoon, nor ſo eaſily be remedied as the former.

[a] Theat. Tabed. pag. 11. [b] Ibid. pag. 14, 15.

But

But the hæmoptöe, the conſequence of this ſtate of the fluids and ſolids, is haſtaned, 1. By a ſuppreſſion of any of the uſual evacuations, chiefly of blood; ſuch as the piles, menſes, lochia, a bleeding at the noſe, a neglect of cuſtomary bleeding, eſpecially in phlethoric habits, and thoſe who have loſt a limb.

There are three principal ways, by which, in time of health, thoſe things are expelled from the body, which, were they allowed to remain, would be very pernicious to it; namely, by ſtool, urine, and perſpiration. If theſe excretions are not duly performed, diſeaſes, and thoſe ſometimes very dangerous, often follow, but the lungs do not ſeem in theſe caſes to be more expoſed to injury than other parts of the body. But there are other excretions, by which noxious ſuperfluities are diſcharged from the body, which would be attended with the worſt conſequences, if they were ſuppreſſed, and, from the retention of theſe acrid particles the veſſels of the lungs are corroded, and an incurable phthiſis is brought on.—An acrid ſerum frequently oozes from the heads of infants, which drying into a cruſt, becomes fetid, and ſometimes a like kind of diſorder ſpreads all over the ſkin. If this excretion ſhould be checked either by accident or deſign, the moſt terrible diſorders and convulſions would be the conſequence. I have ſometimes ſeen a periodical aſthma ariſe from a ſuppreſſion of this excretion, which went off each time by a like eruptionon the face.

There are many inſtances in medical hiſtory which ſhew, that a phthiſis ariſing from an acrimony of the blood, has been cured by ſuch excretions. *Bennet*[a] relates, that he had ſeen many patients who had a muriatic acrimony in the blood, yet their lungs were

[a] Theat. Tabed. pag. 64.

never

never eroded, when the acrimony fell upon other parts, of which he gives a remarkable inſtance in a merchant of London.—*Hoffman* juſtly remarks, that they are miſtaken, who ſuppoſe an abundance of wholeſome blood of a good conſiſtence to be the proximate and material cauſe of hæmorrhages; for in ſuch conſtitutions, the veſſels are ſtrong, and the humours mild: he rather feared hæmorrhages in thoſe whoſe blood abounded with a larger proportion of ſerum than craſſamentum, which is always the caſe in ſubjects of a ſofter texture, and is a proof alſo that the blood is thin and acrid.—It is however certain that diſcharges of blood ſuppreſſed give riſe to this diſeaſe,—and that the beſt remedy is either to reſtore theſe evacuations, or to promote other diſcharges in places leſs dangerous.

The piles.] Frequent inſtances of this are to be found in the beſt writers; and *Hippocrates*[a] has obſerved, "that in curing the bleeding piles, there is "danger of a dropſy or a phthiſis, unleſs one be "kept open."

Menſes, lochia.] It will appear hereafter, that the menſtrual blood, when it is obſtructed, will ſometimes diſcharge itſelf by wonderful paſſages in various parts of the body. It is indeed true, that this often happens from a dilatation of the veſſels, without any rupture, and that when the evacuation ceaſes, the part from which the diſcharge was made, ſuffers no kind of alteration. Phyſicians have obſerved, that an hæmoptöe from this cauſe has ſometimes laſted a great while without being followed with a phthiſis. A caſe of this kind is given us by *Hoffman*, and the obſervations of *Bennet*[b] confirm the ſame. But this event is not always ſo fortunate, as the menſtrual blood frequently obſtructs the veſſels of the lungs, raiſes an inflammation, and produces an ulcer of the lungs, which *Hippocrates* pronounces

[a] Aph. Sect. 6. Aph. 12. [b] Tabed. Theatr. pag. 13.

incurable.

incurable. But the greateſt danger ſeems to be at that age in which the menſes naturally make their firſt appearance, as *Bennet*[a] remarks.

But there is ſtill more danger from a ſuppreſſion of the lochia, as the blood ſtagnating in the veſſels and ſinuſſes of the uterus, and by the admiſſion of air readily putrefying, may produce the moſt pernicious effects in every part of the body, to which their courſe is directed. See Aph. 1329. *Hippocrates* tells us, that coughs, aſthmas, obſtructions, and ſuppurations of the lungs, may ariſe from a ſuppreſſion of the lochia.

Cuſtomary bleeding, &c.] See Aph. 106—The danger of a plethora, and of an hæmoptöe, in perſons who have loſt a limb, was ſhewn at Aph. 474.

2. By any great violence done to the lungs by coughing, hallowing, ſinging, running, or any great ſtraining of the body, by anger, and by any kind of wound.

2. By any great violence done to the lungs by coughing, hallowing, ſinging, running, or any great ſtraining of the body, by anger, and by any kind of wound.

When the larger veſſels may be broken by a great force, it is no wonder that the tender veſſels of the lungs ſhould be ruptured by a cough, &c. which violently agitates the whole cheſt. I was told by a phyſician, worthy of credit, that the inteſtines of a boy who had the whooping-cough, were burſt in a fit of coughing; and *Hoffman* relates the caſe of one who had one of the vertebræ of the back broke by the violence of a cough.—That an hæmoptöe ſhould follow a wound is eaſy to be conceived, and on this ſubject conſult what was before ſaid on wounds of the thorax.

[a] Tabed. Theat. p. 111.

3. By

3. By an acrid, ſalt, and ſpicey diet, and by drink of the like kind; by a particular manner of living, or by any diſeaſe which increaſes the quantity, acrimony, velocity, rarefaction, and heat of the blood; hence it is, that an hæmoptöe ſo often happens in acute fevers, in the plague, ſmall-pox, and in the ſcurvy.

APH. MCXCIX.

HENCE an hæmoptöe begins with a ſlight pain, a moderate heat, and an oppreſſion and anguiſh in the cheſt: the blood thrown up, is generally florid, of a ſcarlet colour, and frothy, there is alſo a cough, and a wheezing or rattling in the lungs; the blood is mixed with ſmall fibres, membranes, arterial, venal, or bronchial veſſels: the pulſe is ſoft, ſmall, and undulating; the patient pants, and perceives a ſaltiſh taſte in his mouth before the blood comes up.

APH. MCC.

AN hæmoptöe is cured, 1. By copious bleeding every third day, for four times, or till the inflammatory cruſt intirely diſappears. 2. By cooling, thickening, ſtyptic, ſoftening medicines, long continued, and mixed now and then with the mildeſt balſamics. 3. By ſo regulating the ſix non-naturals, as to make them contrary to the cauſes of the diſeaſe enumerated at Aph. 1198. And 4thly, By correcting the ſpecific nature of the cauſe, or particular diſeaſe which has occaſioned it.

1. Bleed-

1. Bleeding is neceſſary in an hæmoptöe for two reaſons, namely, to leſſen the quantity of the blood, and alſo to prevent an inflammation.—An hæmoptöe generally abates after bleeding, nay often quite ſtops, unleſs ſome large branch of the pulmonary artery be torn or eroded; but as there is reaſon to fear its return, it will always be adviſeable to repeat the bleeding: but how often, at what intervals, and in what quantity, can only be determined by the particular ſymptoms, which the phyſician will be the beſt judge of. I am guided by the following circumſtances. If the hæmoptöe ceaſes after the firſt bleeding, and the patient feels no pain in his breaſt, if the pulſe be regular and ſlow, but not full:—If the heat of the body, eſpecially of the extremities, be leſs than in ſound health, the breathing free and eaſy, I defer a ſecond bleeding for three or four days; but when the pulſe begins to grow full, and the heat of the body equals or exceeds that of a perſon in health,—if there be a tenſion, or an obtuſe pain felt in the cheſt, or if the cough grows worſe, I repeat the bleeding immediately, even if theſe ſymptoms appear but a few hours after the firſt bleeding: for the whole intention is to diminiſh the quantity and impetus of the blood, that the ruptured veſſel may be united, and the cicatrix now formed, may not be broke open again. Sydenham adviſes frequent bleedings, and it will always be ſafer, rather to exceed in this, than to run the riſk of a return of the hæmoptöe.—But bleeding is neceſſary on another account, viz. to prevent an inflammation. The ancient phyſicians apprehended great danger when an inflammation or fever attended or followed a ſpitting of blood, and with good reaſon; becauſe with theſe ſymptoms, they expected an ulcer of the lungs, and a fatal phthiſis.

2. The impetus and quantity of the blood being thus reduced by veneſection, we are next to direct the medicines that are moſt proper for the cure of an hæmop-

hæmoptöe. At Aph. 228, we mentioned ſuch remedies as ſtop an hæmorrhage from a wound; but theſe can have little effect in the preſent caſe; for aſtringents either act by inſpiſſating the fluids, or by conſtringing the ſolids, or by both theſe effects combined, and if their whole efficacy could reach the lungs, they would not only act upon the broken veſſel, but on all the other veſſels, ſo as to inſpiſſate the fluids, and contract the veſſels, and thereby obſtruct the circulation of the blood through the lungs, and produce a fatal peripneumony. Yet we need not fear ſuch conſequences from the uſe of aſtringents as they cannot be applied immediately to the lungs, but muſt firſt paſs by the lacteals, and thus come ſlowly, and much diluted, to the part affected. For this reaſon phyſicians do not truſt much to aſtringents, although they preſcribe them, that they may not appear to neglect any means that may be of the leaſt ſervice to the patient. A prudent uſe of aſtringents is very ſafe, if they are ordered in a ſmall doſe, and frequently repeated, when the ſymptoms indicate the uſe of them; but the milder kind, ſuch as the bol. armen. terra ſigillata, lapis hæmatitis, and the like, are the moſt proper. In the Materia Medica of our author, under this aphoriſm, various forms of this kind are to be found. *Trallian* extols the *lapis hæmatitis* ground into a fine powder, or infuſed in ſweet wine. As this ſtone is the pure ore of iron, it has all the corroberating qualities of ſteel, when infuſed in wine, by which the weak ſolids are rendered firm, and the diſſolved fluids compact. For the ſame reaſon, *Morton* commends the bark, and ſays that it quickly ſtops a ſpitting of blood, and likewiſe prevents the return of it. *Brunner* confeſſes he did not believe what *Morton* had ſaid of the efficacy of the bark in an hæmoptöe, till he found the truth of it by experience.

But as it ſometimes happens that men are in danger of loſing their lives by a profuſe ſpitting of blood,

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it will be worth while to ſee what art has attempted in ſuch a caſe.—*Celſus*[a] tells us, that *Eraſiſtratus* applied ligatures to the legs, thighs, and arms, and although *Aſclepiades* condemned this practice as hurtful, yet he adds, "but experience ſhews that they "often anſwer the intention." *Bennet*[b], however, a writer of great authority on this diſeaſe, ſays, that ligatures are often unſucceſsful, but that frictions of the extremities and moderate warmth have been of ſervice. Some phyſicians have thought of applying ſtyptics to the ruptured veſſel itſelf, but as this can only be done by ſteams, and the virtues of aſtringents being of a fixed nature, little good can be expected from them.—Alcohol of wine is accounted ſtyptic, and retains this quality, even when diſſolved into ſteams, but ſuch a hot and acrid ſteam would irritate the lungs; and produce a violent cough, which is dangerous in this diſeaſe.—Balſam of *Tolu* conveyed to the lungs in the form of a vapour is recommended by Dr. *Mead*[c], but by this alſo there is danger of exciting a cough. *Bennet*[d] recommends fumigations, but not for ſtopping the hæmoptöe, but rather for cleanſing the ulcer.

When we treated of a delirium in fevers, it was obſerved, that the cauſe which diſturbs the brain, may ſometimes reſide in diſtant parts of the body. On this account, practitioners have thought that an hæmoptöe might be ſtopped in the ſame way. I have ſeen a violent bleeding at the noſe ſtopt, by applying linen four times doubled, wet with cold wine and water, to the ſcrotum. *Hoffman*[e] has a remarkable paſſage to this purpoſe, "It is wonderful, "ſays he, that a ſtrong ſtyptic taken inwardly, "very ſpeedily operates on different parts, and by "contracting them, puts a ſtop to profuſe hæ-

[a] Lib. iv. cap. 4. [b] Theat. Tabed. pag. 71. [c] Monit. & Præcept. Med. pag. 53. [d] Ibid. pag. 126. [e] Pathol. tom. 2. pag. 416.

"morrhages;

" morrhages; thus in an hæmoptöe, and an immo-
" derate flux of the menſes, the eruption of blood
" has ſoon ſtopt after taking tincture of ſulphur,
" vitriol, or blood-ſtone. But we have not learnt
" by certain experiments to what parts of the body
" theſe remedies ought to be applied."

In urgent caſes, phyſicians have ventured to give cold water, which, though it ſeems dangerous, has often proved ſucceſsful.—*Martin Ghiſi*, who practiſes with great ſucceſs in *Cremona*, among other uſeful obſervations, relates the caſe of a very robuſt man in the hoſpital, who threw up ſuddenly three pints of blood. He immediately gave him water made extremely cold with ice, with ſo good effect, that the hæmoptöe ſtopt almoſt entirely, and the patient kept well for three days; when the hæmoptöe returning with violence, he was inſtantaneouſly ſuffocated. But it was owing to his indiſcretion, for he eat largely of ſome roaſt meat, and drank a great quantity of ſome ſtrong wine, which his wife had privately brought to him.—He mentions another caſe of a youth, who had a frequent ſpitting of blood, attended with a fever; after trying repeated bleedings, and other remedies unſucceſsfully, he gave him ice-water, a cup of which he was to drink every quarter of an hour at leaſt. In a few hours the hæmoptöe ceaſed, the fever and cough abated, and in a few days he perfectly recovered.

After this, *Ignatius Gervaſcus a Monte Faleſco*, a celebrated phyſician at Rome confirmed this method of cure. He not only gave cold water to drink, but when the caſe was urgent, he applied ſpunges dipped in cold water to the naked breaſt, and ordered a thin cool diet. At the ſame time he forbad giving the patient warm broth, as he had obſerved that this increaſed the cough, and brought on the hæmoptöe. *Trallian* long before gave the like caution.

Aſtringent remedies, or ſuch as are incraſſating, and at the ſame time ſoften acrimony, are here alſo

recommended; ſometimes remedies of both claſſes are combined.—Gum arabic, gum tragacanth, ſtarch, the roots, leaves and flowers of the greater comfrey, are given for this intention; among the aſtringents we may claſs the root, leaves, and ſeeds of plantain, cinquefoil, pimpernel, tormentil, biſtort, &c. *Bennet*[a] compoſed a medicine chiefly of incraſſating ingredients, with ſome aſtringents. He gave ſix ounces of this every morning for four or five days, and ſays, that it ſcarce ever failed of ſucceſs.

But as experience has ſhewn, that native balſams are ſo beneficial in recent wounds, phyſicians preſcribe them alſo in this diſeaſe. Of theſe, the principal which are uſed internally, are pure turpentine, *balſam capaiva*, of *Peru*, *Mecca*, and *Tolu*; but as all theſe balſams have a warm aromatic quality, they muſt be given in ſmall doſes, elſe they will increaſe the heat and motion of the blood; for which reaſon, only four grains are directed to be taken every four hours, in the preſcription for this intention given in the *Materia Medica*.

3. Our author's inſtitutes[b] explain what is meant by the ſix non-naturals, all which a ſkilful phyſician will ſo regulate, as to be contrary to the cauſes of the diſorder. Great heat or intenſe cold of the air will be equally injurious. Reſt is abſolutely neceſſary, leſt the return of the venal blood ſhould be accelerated by the action of the muſcles, and circulated through the lungs with too great impetuoſity, and thus endanger a relapſe. Hence it is evident how much a cough is to be dreaded, which not only threatens the rupture of a veſſel, but prevents the already ruptured veſſel from cloſing again.—A cough therefore is to be ſtilled by a prudent uſe of anodynes, and for the ſame reaſon the patient ſhould be warned not to talk much.—Sleep ſhould be indulged, that in this time of tranquillity the cloſing of the wound may be

[a] Theat. Tabid. pag. 140. [b] Inſtitut. Med. ſec. 745.

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promoted: at the ſame time, the body ſhould be well covered, and perſpiration kept up.

The diet ſhould be very ſoft, mild, and cooling, and nothing be allowed that is either acrid, or may eaſily turn acrimonious. The food therefore ſhould be of the ſofter farinaceous ſubſtances, of ſoft ripened fruits, well fermented bread, milk, ſoft vegetables, and weak broths well cleared of their fat, with rice boiled in them. Some people are fond of giving calves-foot jelly; but theſe are too glutinous, and will rather oppreſs the weak lungs, than nouriſh the body, and are therefore to be rejected: but when the patient grows better, the white meats, eſpecially chicken, may be added to theſe.

For common drink, new milk diluted with equal parts of water or barley water will be proper in the winter; in the ſummer, as more diluting liquids are then neceſſary, the drink may be the ſame, only in different proportions, viz. two thirds water or barley water, to one third of milk. But leſt this drink ſhould turn ſour, or curdle in the ſtomach, a little ſugar, or Venice ſoap, together with ſome abſorbents may be added. A formula for this intention is given in our author's Materia Medica.

4. The cauſes both pre-diſpoſing and procatarctic were enumerated at Aph. 1198, to which we muſt always attend in the cure of this diſeaſe; as it is not only requiſite to cure the hæmoptöe, but alſo to prevent its return, which frequently happens. The procatarctic cauſes may be prevented by a careful regimen, but the pre-diſpoſing are more difficult to correct.—Thus an hereditary diſpoſition to an hæmoptöe cannot be removed by art, and it is difficult to correct thoſe cauſes enumerated at No. 1, and 2. An acrid diſpoſition of the blood may be corrected by ſoft aliments, and medicines of an oppoſite nature to the predominant acrimony. But who can hope to alter the flat cheſt, long neck, &c. which are enumerated

among the prognoſtics of an hæmoptöe and a phthiſis?

APH MCCI.

WHEN a ſpitting of blood has been cured, bleeding ſhould be uſed every ſix months for ſome years, gradually leſſening the quantity each time.

It is certain that bleeding is neceſſary to prevent the return of an hæmoptöe; but how often it ſhould be repeated muſt be left to the judgment of the phyſician. In the ſpring and autumn, it is beſt to bleed by way of prevention, becauſe at theſe ſeaſons the greateſt changes happen to the body. I generally order more frequent bleedings, eſpecially if the patient be young, and of a ſanguine conſtitution.—Beſides this, I carefully obſerve whether any of thoſe ſymptoms attend which appeared before the coming on of the hæmoptöe. Theſe ſymptoms are very different. Thus *Bennet* [a] has obſerved, "if after "ſpitting of blood, there follows a ſpitting of a "ropy, bluiſh, ſmooth matter, and this continues "for ſome time, it denotes a return of the hæmop-"töe; if this matter be purulent, it foretells a phthi-"ſis both to young and old. If no matter at all be "ſpit up, it prognoſticates a recovery." But in general, an oppreſſion on the breaſt, a heat in the throat, a ſlight dry cough, an unuſual pulſation in the right, and ſometimes in the left hypochondre, are ſigns of an approaching hæmoptöe, unleſs prevented by bleeding.

[a] Theat. Tabed. pag. 109.

APH.

APH. MCCII.

BUT if the hæmoptöe be very profuſe, if ſtyptics have been improperly applied, or the method of cure directed in the preceding aphoriſm neglected, there ariſes after the ſpitting of blood, a difficulty of breathing continually increaſing; a ſhivering in different parts of the body; a heat and redneſs of the cheeks; a dry cough; a hectic fever; great thirſt; weakneſs; and a ſenſe of weight in the thorax; theſe ſymptoms denote, that the wounded veſſel has changed the matter collected about its lips, and under the cruſt of dried blood, into pus; and that this collection is turning into a vomica, which upon breaking, terminates in an open ulcer of the lungs.

When the hæmoptöe ariſes from an anaſtomoſis of the veſſels, there are great hopes of a cure, becauſe by the loſs of blood brought up, as well as by bleeding, the emptied veſſels will contract of their own accord.—If from any violent cauſe a veſſel be ruptured in the lungs, there yet may be hopes of cloſing the wound without ſuppuration, unleſs it be very large indeed. But when the veſſels have been corroded by the acrimony of the fluids, it will then certainly be difficult to prevent a ſuppuration; for this is not a ſimple wound; and the inflammation which commonly ariſes about the lips of the wound, will not go off by a mild reſolution, becauſe to effect this a mild diſpoſition of the fluids is abſolutely requiſite. See Aph. 386. Nor is it always in the power of art to correct, in a few days, ſuch an acrimony in the fluids, as was great enough to corrode the veſſels themſelves.

Grumous blood left in the lungs after an hæmoptöe, is another cauſe of ſuppuration; for when the hæmoptöe ceaſes, ſome part of the concreted blood remains about the orifice of the ruptured veſſel, and even in the bronchia themſelves, and as ſuch patients muſt be kept quiet, and breathe as gently as poſſible, grumous blood will ſometimes remain there a conſiderable time. But when ſtrong ſtyptics have been applied, or the hæmoptöe ſtopt by drinking very cold water, there is reaſon to fear, that grumous blood has been formed, and adheres to theſe parts. *Bennet* [a] ſeems to have feared a phthiſis from grumous blood long retained in the lungs; for he ſays, "that if after the hæmoptöe ceaſes,—the remaining "blood is not carried off by expectoration, there "will be danger of a conſumption, from a putre-"faction of the retained grumous blood, or of the "lungs themſelves." Yet in another place [b] he obſerves, "that the bronchia are leſs obſtructed by "grumous blood turning putrid, than by the nutri-"tious juice when it is converted into a mucila-"ginous ſtubſtance."—For when extravaſated blood begins to grow putrid, it diſſolves, and may be eaſily expectorated. It is true, we ought to endeavour to remove this grumous blood, but it ought to be done with the greateſt caution, for fear of exciting a violent cough, by which the hæmoptöe might be brought on afreſh. Beſides, it is to be obſerved, that a clot of grumous blood ſtopping in ſome branch of the aſpera arteria, is often contiguous to that which cloſes the ruptured veſſel, if therefore the one is diſcharged by coughing, the other muſt alſo come away with it, and the hæmoptöe return.

I have ſometimes ſeen theſe grumous clots ſpontaneouſly diſcharged by a ſlight cough, in a day or two; but if after this no grumous blood comes away, and the patient feels a weight and oppreſſion in the

[a] Theat. Tabed. pag. 108. [b] Ibid. pag. 109.

cheſt,

cheſt, I adviſe him to draw in with his breath the ſteam of warm water, which generally brings theſe clots away with great eaſe. But grumous blood collected in the air-veſſels of the lungs does not always grow putrid, but is ſometimes formed into polypoſe concretions, which, when brought up by coughing retain the form of the veſſels and their ramifications. There is, moreover, a cellular membrane between the bronchia, through which innumerable veſſels are diſtributed; if theſe ſhould be ruptured, they would pour forth their blood into the cells of this membrane, where it might by its long ſtay, corrode and inflame the lungs, eſpecially if the humours be acrimonious.

Of the ſigns of an abſceſs of the lungs after an hæmoptöe we treated at Aph. 834, 835, when we gave the hiſtory of a vomica of the lungs following a peripneumony; for all the ſymptoms are the ſame here.

APH. MCCIII.

THIS collection of matter likewiſe ariſes not only from the cauſes enumerated at Aph. 1198, but alſo from any peripneumony terminating in an abſceſs: which is known from the ſymptoms enumerated at Aph. 832, to 843, and 867.

APH. MCCIV.

AN empyema likewiſe may corrode, diſſolve, and conſume the lungs; ſo that the ſame diſeaſe follows, as from an ulcer originally formed in their ſubſtance. This is known from the ſymptoms enumerated at Aph. 1188. No. 4.

But every diſeaſe, capable of producing an ulcer in the lungs, may terminate alſo in a Phthiſis.

APH. MCCV.

WHENCE it is plain, what theſe ſigns are which denote an ulcer in the lungs, even though it be latent, what the various cauſes, how many different kinds of ulcers, and likewiſe, how many different kinds of conſumptions there are.

When pus is ſpit after an hæmoptöe, no one doubts that the lungs are ulcerated; eſpecially if freſh matter be brought up every day, and the quantity not leſſened in a few days. But it is more difficult to diſtinguiſh a latent vomica formed after an hæmoptöe, as the diſorder uſually begins with very ſlight ſymptoms, yet the phyſician who attends to the ſigns laid down in Aph. 1202, will not be eaſily deceived in his diagnoſis.—But the phyſician may be eaſily deceived, when, without any ſpitting of blood, or any other conſiderable complaint, a vomica is formed in the lungs, and gradually grows larger, till burſting of itſelf, it occaſions ſudden death. *Tulpius* [a] obſerved ſeveral of ſuch latent vomicas.

But there are other cauſes, which, without a ſpitting of blood, often produce an incurable conſumption, and the knowledge of ſuch cauſes indicates a different method of cure.—Sometimes ſtones are generated in the lungs. I have ſeen ſuch matter thrown out by a cough, friable, and like plaſter, ſometimes much harder. *Willis* [b] affirms, that in the bodies of ſeveral who had died of a conſumption, "he "had found the lungs quite free from any ulcer,

[a] Lib. 2. Cap. x. pag. 114, &c. [b] Pharm. Rational. Vol. ii. pag. 87.

" but all over full of tubercles, ſtones, or a ſandy " ſubſtance." It is certain, that theſe often occaſion an ulcer of the lungs, as I myſelf have ſeen, and which *Bennet* [a] alſo confirms.

Mead has obſerved, that thoſe perſons were moſt liable to ulcers in the lungs, who were troubled with ſtrumous ſwellings in their childhood, or in their youth. But we often ſee perſons ſubject to ſtrumous complaints, have ſwellings in the neck which laſt for many months, nay years, that do not come to ſuppuration. Beſides, it is confirmed by many obſervations that theſe lodge alſo in other viſcera, and that theſe humours, even in the ſame body, are compoſed of different ſubſtances.—In the body of an aſthmatic youth the lungs were found in part ulcerated, and partly full of tubercles containing a chalky matter. The concave part of the liver, the ſpleen, and the whole meſentery, had great numbers of ſuch tubercles. In a boy who appeared perfectly recovered from a beginning conſumption, but who died in convulſions, the lungs were found filled with tubercles, ſome of which contained a thin pus, others a ſubſtance as thick as new cheeſe.

If therefore the lungs be ſtuffed with ſuch tubercles which ſuppurate ſo ſlowly, a man may periſh with a ſlow maraſmus, before a purulent phthiſis comes on; becauſe the action of the lungs in perfecting the chyle is greatly impaired. There are many curious obſervations which confirm this [b]. A ſoldier twenty-five years old was afflicted with a ſlow fever, a dry cough, a ſlight oppreſſion of the breaſt, his face was pale, and his body extremely emaciated. After two bleedings he was put upon a milk diet. In the evening he took ſyrup of white poppies, but nothing did him good. He grew ſtill thinner, and died very quietly, without a diarrhæa, the conclud-

[a] Theat Tabed. pag. 110. [b] Barrere. Obſerv. Anatom. 124, &c.

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ing ſcene of a phthiſis. His reſpiration through the whole courſe of the diſeaſe was not very laborious.—On opening the body, the lungs felt as if they were filled with gravel, and in each lobe a great number of ſmall tubercles were diſcovered, which contained a matter reſembling plaſter, but much ſofter. Another ſoldier twenty-eight years old, emaciated and weak; had a very troubleſome cough for eight months, but ſpit ſeldom; and when he did, it was tough, white, and never purulent. He could not bear to lie on the left ſide.—Various remedies were tried, but all in vain. Slight ſweats ſucceeded,—ſudden waſting, a difficulty of ſwallowing, a loſs of ſpeech,—and at length death,—but he never had a diarrhæa. On diſſecting the body, the lungs were found every where adhering to the pleura, full of very ſmall tubercles, about the ſize of a grain of millet. When the lungs were ſqueezed, hard tubercles were felt as big as a nut, ſome of which contained a white matter reſembling ſoft plaſter, one of them only containing pus. In the upper part of the right lobe there was a tumour as hard as ſtone, and as big as a ſmall hen's egg.

Such tubercles, although they were originally hard, and filled with a chalky matter, yet in time ſuppurated, and produced a phthiſis with an ulceration of the lungs; ſo that they may be reckoned among the cauſes of a pulmonary conſumption, properly ſo called. Theſe tubercles, may indeed, be ſo numerous as almoſt to deſtroy the action of the lungs, and then the patient dies of a true maraſmus, before they can poſſibly come to a ſuppuration; inſtances of which frequently occur in practice. A purulent ſpitting, which in ſome meaſure relieves, frequently follows an obtuſe pain felt deep in the breaſt, with ſome difficulty of breathing. The quantity of ſpit diminiſhes gradually,—the ſmall vomica heals up again, and the patient thinks himſelf well: but as a new tubercle forms matter and breaks, all the former ſymptoms

toms return in a few months.—Theſe inſtances are ſufficient to ſhew the different kinds and cauſes of conſumptions. We are next to conſider, how and with what ſymptoms an ulcer of the lungs turns into a phthiſis.

APH MCCVI.

THE effects of an ulcer already formed in the lungs, but concealed, under the name of *vomica*, are generally theſe following.—A daily increaſe of the acrimony, quantity, and putridity of the matter: a dilatation, corroſion, and waſting of the membrane incloſing the pus; a converſion of the blood and bronchial veſſels into pus: a purulent conſumption of the whole ſubſtance, or of one lobe of the lungs. A continual dry cough, or ſuch only as forces out an abraded ſpit by concuſſion; a converſion of the blood flowing to the ulcer into pus; a ſpreading of the vomica through the lungs, and its burſting into the tubes of the larynx; ſometimes there is a diſcharge of pus which inſtantly ſuffocates, or it is daily carried off by a cough; this pus generally ſinks in water, is thick, ſweet, fat, fetid, white, red, yellow, livid, cineritious, ſtringy, and ſmells like ſtale roaſted meat, when thrown on the fire. If the vomica breaks into the cavity of the thorax, the breathing becomes very difficult, and all the ſymptoms of an empyema appear. See Aph. 1188. No. 4.—Now the breathing is worſt of all; the blood and chyle are converted into pus; the ſuccus nutritius can no longer be prepared; the ſolids are waſted; there is a hectic fever, with a ſmall

and

and languid pulſe; a pungent heat in the upper parts of the body; the cheeks fluſh, and the face becomes hippocratic; an inexpreſſible anxiety, eſpecially towards the evening; great thirſt; profuſe night ſweats; red puſtules; a ſwelling of the feet and hands of the affected ſide;—great weakneſs; a hoarſe voice, a falling off of the hair; an itching all over the body, with watery puſtules; a diarrhæa, with yellow, putrid, purulent and cadaverous ſtools, with a teneſmus, that weakens greatly; a ſuppreſſion of the ſpit, and at laſt death.

Although a vomica of the lungs is never without danger, yet experience teaches, that many more recover when they ſpit up a large quantity of pus at once, as in a ſuppurated pleuriſy or peripneumony, than when the pus is collected in ſmall tubercles in the lungs. Dr. *Mead*[a] affirms the ſame, and *Hippocrates* ventured to promiſe health to thoſe who had vomicas collected in the lungs after pleuriſies or peripneumonies; but when from other cauſes, he feared the worſt conſequences.

There is great difference even in the method of curing external ulcers. An abſceſs from a violent inflammation is opened as ſoon as it is ripe, and thus the matter is diſcharged, the tumour ſubſides, and at length conſolidates. But when ſcrophulous tubercles ſuppurate, how ſlowly do they proceed, how tedious to cure, what diſfiguring and deep ſcars remain! Scorbutic ulcers prey upon all the adjacent fleſh, and elude the art of ſurgery, unleſs the ſcorbutic acrimony of the humours can be corrected. Hence it appears why large vomicas in the lungs are often happily cured, while ſmall tubercles are ſo difficult to heal.

[a] Monita & præcept. med. pag. 53.

But

But by a long ſuppuration the whole ſubſtance of the lungs may be conſumed, as we ſee fiſtulous and ſinuous ulcers in the external parts, not only deſtroy the membrana adipoſa, but alſo the muſcles, and even the bones themſelves. It ſeems indeed poſſible, that by a long ſuppuration a part of the bronchia may be ſo diſſolved, as to be ſpit out, although ſome have doubted of this. *Bennet* [a] atteſts, that he had more than once ſeen "the ſubſtance of the lungs ſo "diſſolved, that it ſeemed to be turned into a putrid "maſs." *Diemerbroek* [b] whoſe teſtimony alone is ſufficient, ſaw the lungs ſo ulcerated that ſcarce half of them was left entire.

It is, however, to be confeſſed, that the lungs are not always conſumed in a phthiſis, although a great quantity of pus has been ſpit out. I freely own, that this has happened to myſelf; and there was a ſingular inſtance of this kind in the hoſpital of *Vienna* [c], where after a very copious diſcharge of pus, the lungs were found entire. But obſervations evince, that a ſuppuration does not always conſume the part from whence the pus is diſcharged, yet when a great quantity of pus is daily excreted, the body waſtes away, as in amputations, &c.

A continual dry cough, &c.] For ſo long as a tubercle, or a vomica not yet broken, preſſes and irritates the adjacent parts, a cough either dry, or a little mucus muſt be forced up by concuſſion of the lungs in coughing.

A converſion of the blood flowing, &c.] For as the blood of the whole body muſt neceſſarily paſs through the lungs after they are ſuppurated, it will not appear ſtrange that the quantity of pus ſhould daily increaſe, and that the vomica while it is confined, ſhould be enlarged more and more; or when it breaks, that new pus ſhould be continu-

[a] Theat. Tabed. pag. 64. [b] Anatom. Lib. ii. pag. 310.
[c] De Haen. Ratio Medend. Pars i. pag. 118.

ally

ally formed, and as conſtantly diſcharged by ſpitting, and thus all the fluids in the body be converted into pus.

Or—daily carried off by a cough.] The more the matter ſpit up differs from laudable pus, the leſs hope there is of a cure. For this reaſon phyſicians examine the ſpit of conſumptive perſons in order to form a juſt prognoſtic. *Hippocrates* obſerves, that "if it ſinks to the bottom when thrown into ſalt "water, they ſoon die."—Almoſt all phyſicians after him have condemned this kind of ſpit, and have accounted it a ſign of a waſting of the ſolids. But it is to be remarked, that this holds only in ſpit which is purulent without any mixture of mucus, for that which lines the trachæa and bronchia is ever frothy, and contains air bubbles, by which it is ſuſpended in the water till thoſe are diſperſed.

The matter ſpit up in conſumptions has various taſtes alſo, *Hippocrates* mentions the expectoration of a thick paliſh green matter, and of a ſweet taſte; and *Bennet* [a] ſeems to have looked upon this ſweet ſpit as a very ſuſpicious ſymptom; for he thought that the nutritious juice was excreted by this ſort of ſpitting, and that the patients were carried off by a maraſmus; and he was confirmed in this opinion by finding in the body of a man who died after ſuch a ſpitting, "all the organs of reſpiration, and all the viſcera "ſound to the ſight, but that the lungs were every "where ſoft, and had loſt their tone," and that, "when "put on the fire, it acquired, like all nutritious juices, "the conſiſtence of a whitiſh jelly." But he reckons that ſpit beſt of all which has no taſte; for he obſerves, "that conſumptive people frequently ſpit up matter "that has no taſte, but theſe waſte more ſlowly, al-"though they have ſome original defect in the lungs [b]."

Very fetid ſpittings are of worſe preſage, as they indicate a putrefaction already begun; yet *Bennet*

[a] Theat. Tabed. pag. 66, 67. [b] Ibid. pag. 110.

ſeems

ſeems to think that they are not always a fatal ſymptom, for he ſays, "the pureſt blood will grow pu-"trid if it be deprived of its vital heat[a]." Certainly grumous blood, or pus lodged in the bronchia, may ſoon corrupt, from the free acceſs of air, and the heat and moſture of the place. For this reaſon, he farther obſerves that a ſtinking breath is one of the worſt ſigns, but joins with it a very laborious reſpiration.—I have ſeen patients whoſe expectoration was moſt fetid, and who yet lived a long time afterwards. From this inſtance, I underſtood why *Hippocrates* had ſaid, "that thoſe who are ſuppurated, and find "themſelves better, if they ſpit any thing fetid, they "relapſe and die."

It is not ſafe to be much converſant with phthiſical perſons, as the putrid effluvia of the ſpit may be drawn in with the air, and infect the lungs. *Galen* gives the ſame caution; and *Bennet* ſeems to fear ſomething bad from the breath of perſons dying of a conſumption, although the matter ſpit up ſhould not be fetid.

If the vomica breaks into, &c.] A vomica may certainly diſcharge its matter into the cavity of the thorax; this however happens but rarely in phthiſical caſes, as the matter is generally diſcharged by ſpitting.—If an empyema is difficult to cure when the lungs are ſound, what can we hope when they are already injured. See what has been ſaid of the empyema.

Now the reſpiration is worſt of all.] For the lungs being almoſt conſumed, few air-veſſels remain; the pus is often collected in the bronchia, and the patient is too feeble to bring it up by coughing.—A vomica, before it breaks, by compreſſing the yet unobſtructed veſſels, produces the ſame bad conſequences.

[a] Theat. Tabed. pag. 44.

The

The blood and chyle are converted into pus, &c.] After amputations of the limbs, there ſometimes enſues ſo great a ſuppuration that the patient waſtes away from this cauſe only, although the viſcera be quite ſound, becauſe the nutritious juices are converted into pus, and iſſue with it through the ſurface of the wound. In a large ulcer of the lungs, the ſame conſequences muſt neceſſarily follow, and indeed, much more, as the whole maſs of blood muſt circulate through the lungs, and the chyle, as ſoon as it mixes with the blood, is carried with it through the veſſels of the lungs; but after amputations only a part of the blood and chyle paſſes through the places where the amputation was made. Beſides, we are taught from phyſiology, that it is by the action of the lungs, that the chyle is formed into a nutritious juice, to ſupply the continual waſte of the ſolids and fluids. For this reaſon, phthiſical patients waſte both from a loſs of nutritive juices, and from an inability of the lungs to perfect the chyle. In conſumptive people, the primæ viæ ſometimes perform all their functions, and yet they gradually waſte. *Bennet* [a] held this for a very bad ſign.

The ſolids are waſted.] For by the purulent ſpitting and nocturnal ſweats, the fluids are exhauſted; hence the veſſels being no longer diſtended by the fluids, contract; the fat, on which the plumpneſs of the body depends, is conſumed, and the ſkin and bones ſeem only to remain; yet the action of the muſcles ſtill continues, and the patient can perform all muſcular motions, as far as their ſtrength will allow.

A hectic fever with a ſmall, &c.] In the beginning of a conſumption the fever is chiefly in the evening, and begins ſometimes with a ſlight ſhivering, and ſometimes without, manifeſting itſelf by the quickneſs of the pulſe, a heat, and flushing of the

[a] Theat. Tabed. pag. 11.

cheeks.

cheeks. In the morning the pulſe is natural, which gives it the appearance of a quotidian ague. *Aretæus* has remarked this. But as the diſeaſe grows worſe, the hectic heat increaſes, and the pulſe is quick even early in the morning, and in this ſtate *Hoffman* tells us, there is very little hope of a recovery. It is certain, that ſometimes a real exacerbation, and a perfect intermiſſion has been obſerved, and *Hippocrates* ſeems to have obſerved the ſame, when he ſays, "that intermitting fevers are moſtly attended with ſweats, "when pus is formed." But when the lungs are full of tubercles which ſuppurate ſucceſſively, then as theſe come to maturity, the violence of the fever is conſiderably increaſed, which abates again when the pus is diſcharged by ſpitting, until another tubercle ſuppurating, brings on another paroxyſm. When the pus becomes acrid and ichorous the whole maſs of blood is infected with a putrid taint, and a putrid malignant fever ariſes, which ſoon kills the patient. *Bennet* [a] obſerved the ſame.

An inexpreſſible anxiety.] At Aph. 631. we ſhewed, that the cauſe of a febrile anxiety was an obſtructed paſſage of the blood through the extremities of the pulmonary artery. In phthiſical caſes the ſame obſtruction happens, but in a greater degree, the lungs being either conſumed, or filled with pus. This anxiety increaſes towards the evening, at which time, the ſpitting abates, and the fever ariſes; but in the morning, when the fever goes, and the matter collected and concocted in the night is ſpit up, then this ſymptom abates.

Great thirſt, profuſe night ſweats.] In a phthiſis, the whole body is dried up, and the anxiety ſhews, that the fluids circulate with difficulty through the veſſels of the lungs. At the ſame time, the blood is infected with purulent matter, and conſequently more acrid, which is another cauſe of thirſt. Add

[a] Theat. Tabed. pag. 111.

to theſe night ſweats, which diſſipate the thinner parts of the blood, from which cauſe alone thirſt will ariſe, even in healthy perſons. See what was ſaid of a febrile thirſt at Aph. 636, and of night ſweats at Aph. 835.

Red puſtules, &c.] Theſe often happen when the thinner fluids are carried off by ſweat, the thicker being ſtopped in the narrow extremities of the cutaneous veſſels. Theſe puſtules appear in healthy people in very hot weather; much more may theſe be expected in phthiſical perſons, in whom the pores are leſs pervious, and the humours acrid; from the ſame cauſe an itching ariſes all over the body. *Bennet*[a] reckons among the ſigns of an incurable conſumption, "a ſcurf upon the extreme parts and "upon the ſkin, with a deficiency of moiſture." *Hippocrates* has obſerved the ſame thing in his Coan Prognoſtics.

A ſwelling of the feet and hands of the, &c.] It will appear hereafter, that whatever hinders the free return of the lymph by the veins will occaſion a dropſical ſwelling. Now in the laſt ſtage of a conſumption, the blood from the right ventricle of the heart circulates with difficulty through the lungs; whence a reſiſtance to the motion of the blood through the veins to the heart; and therefore a more difficult abſorption of the lymph by the bibulous veſſels. At the ſame time a ſmall quantity of blood moves through the arteries, hence a weak pulſe; and as the action of the arteries next the veins cannot forward the venal blood, the lymph will ſtagnate in parts remote from the heart, whence a ſwelling of the hands and feet. But whether experience confirms what is ſaid in the text, I confeſs I know not; at leaſt I have never obſerved it in patients whom I have attended.

Great weakneſs; a hoarſe voice.] A perſon exhauſted by a hectic fever, by ſweat and expectoration,

[a] Theat. Tabed. pag. 105.

muſt

muſt ſoon be reduced to a ſtate of extreme weakneſs; and the dryneſs of thoſe parts which are the inſtruments of ſpeech, muſt occaſion a hoarſeneſs.

Falling off of the hair.] The hairs proceed from a ſmall bulbous root fixed in the cellular membrane, or from the ſebaceous cryptæ of the ſkin. In healthy men they are always oily. But when by age, or acute diſeaſes the fat is conſumed, the hairs fall off; yet if the bulbous roots remain unhurt, they grow again. It is therefore no wonder, that in the laſt ſtage of a conſumption the hairs fall off, when the fat is conſumed, and the ſkin is quite dry and ſapleſs. *Hippocrates* accounts this a fatal ſymptom, and that the patient will be carried off by a diarrhæa.. All phyſicians from his time have confirmed the truth of this prognoſtic.

Sometimes, although leſs frequently, white fæces like chyle are diſcharged, which is a moſt fatal ſign, for in this caſe all kind of nouriſhment is drained from the already too-much exhauſted body.—*Cælius Aurelianus* takes notice of this flux, and *Bennet* pronounces it moſt fatal.—Such is the progreſs of this dangerous diſeaſe, which deſtroys ſo many in the flower of their age. *Hippocrates* [a], with his uſual brevity, has accurately deſcribed the different periods of this diſeaſe, when he ſays, "A ſpitting of "pus, after ſpitting of blood, is a bad ſign."—"After a ſpitting of pus, a conſumption and diar-"rhæa follow.—When the ſpitting ſtops, the pa-"tient dies." In the next Aphoriſm follow ſome general rules of great uſe in forming a juſt prognoſis in this diſeaſe.

APH. MCCVII.

1. AN hereditary phthiſis is the worſt of all, and not to be cured, but by preventing the Hæmoptöe.

[a] Aphoriſ. Sec. 7. Aph. 15, 16.

2. A phthiſis ariſing from an hæmoptöe occaſioned by external violence; without any internal defect, is, cæteris paribus, the leaſt dangerous.

3. A phthiſis in which the vomica ſoon burſts, and eaſily diſcharges a white, ſmooth, and concocted pus, equal in quantity to the ſize of the ulcer, without thirſt, with a good appetite and digeſtion, and the ſecretions and excretions as in health, may be cured, although with difficulty.

4. A phthiſis from an empyema is incurable.

5. An expectoration of heavy, ſolid, ſtinking, ſweet matter, with the laſt ſigns of Aph. 1206, extinguiſh all hopes of a cure.

APH. MCCVIII.

WHEN a vomica is once formed in the lungs, the curative indications are to ripen and break it as ſoon as poſſible: which is done by a milk diet, riding on horſeback, by warm ſteams, and by expectorating medicines. When it is burſt, it is requiſite,

1. To guard the blood againſt the purulent infection.

2. To evacuate the pus as ſoon as poſſible, and to cleanſe and conſolidate the lips of the ulcer.

3. To direct ſuch aliments as require but a ſmall force not only to paſs through the lungs, but alſo to be aſſimilated, yet fit to nouriſh the body, and not eaſily convertible into pus.

1. It ſeems ſcarce poſſible entirely to prevent an abſorption of the matter, but we muſt endeavour by art

art to waſh out from the blood the matter that has been abſorpt, which is readily done by ſuch remedies as reſiſt that degeneration of the humours which the pus may produce. Of theſe we ſhall treat in the following Aphoriſm.

2. Theſe are the general indications in the cure of all ulcers, as was obſerved at Aph. 411; but it eaſily appears that this cannot be effected in an ulcer of the lungs, but with great difficulty, as we can neither diſcern with our eyes the changes made in the ulcer, nor have acceſs to it with our hands.—We may indeed know by the matter expectorated the condition of the ulcer: but if the vomica be changed into a fiſtulous ulcer, which ſometimes happens, as appears from obſervations, it will be then more difficult to cure, as neither the narrow orifice of the fiſtula can be dilated, nor the callous hardneſs be removed, both which muſt be done, in order to obtain a cure.

3. At Aph. 192, and the following, we directed the diet proper for reſtoring loſt ſubſtances, and for the conſolidation of parts ſeparated. But to conſolidate an ulcer of the lungs, it muſt be reduced to the ſtate of a recent wound, only a much greater degree of caution is here required: for the quantity of chyle which comes to other parts of the body, is in proportion to that which it bears to the reſt of the body; but all the chyle comes to the lungs while it is crude, and yet retains the nature of aliments. For this reaſon, the food ſhould be of eaſy digeſtion, and taken in ſmall quantities, leſt the diſeaſed lungs ſhould be oppreſſed by too great a quantity of chyle at once.

It is ſaid in the text that ſuch food ſhould be given as is moſt proper to nouriſh the body, and not eaſily convertible into pus. But this is not meant that the forming of pus ſhould be hindered; for by good pus the bottom of ulcers is deterged and conſolidated. All that is meant here is, that food does not by an

exceſs in quantity, or quality, produce new obſtructions, and increaſe the ſuppuration. Hence alſo we may ſee the abſurdity of giving glutinous aliments to emaciated phthiſical perſons, with this view, that they will ſtay longer in the body, and adhere more firmly to the parts. *Bennet*[a] has remarked the ill effects of ſuch glutinous food.

APH. MCCIX.

THE firſt indication is anſwered by medicines that are in a moderate degree acid and ſaline, by vulnerary plants, and by mild balſamics, given in every form, and in large quantities.

To guard the blood againſt the purulent infection three things are chiefly to be conſidered. Firſt, that the pus do not remain long in the vomica, which is effected by promoting expectoration, and by ſuch medicines as gently deterge the ulcer. Secondly, that the pus abſorbed be carried off as ſoon as poſſible by the uſual excretory channels of the body, that is, the inteſtines, kidneys, and the pores of the ſkin. Thirdly, that ſuch remedies be given as effectually correct that corruption of the humours produced by the abſorbed pus.

To anſwer the firſt indication, the phyſician muſt do nothing to prevent the healing of the ulcer in the lungs.—If a ſurgeon was continually to deterge an external ulcer, it would never heal; for good pus ſhould be left in the ulcer ſome time, that under it the diſeaſed part may be ſeparated from the ſound, and that what is loſt may grow again. The ſame thing happens in an ulcer of the lungs; we are therefore to promote expectoration, becauſe too frequent

[a] Theat. Tabed. p. 149.

a cough

a cough exaſperates the ulcerated parts, and prevents the formation of laudable pus.—It is adviſeable therefore to allay the cough by a prudent uſe of anodynes, that the lungs may have reſt, at leaſt, in the night, and that during this time of reſt a conſolidation of the ulcer may begin. If the cure proceeds happily, the quantity of pus gradually decreaſes, without that anxiety which uſually attends pus long retained in the lungs. *Bennet* [a] gives good advice when he ſays, "in the day-time, when the critical "ſpitting comes on, expectoration is to be pro-"moted by lenient medicines only, becauſe then na-"ture co-operates with us." He likewiſe adviſes for the ſame intention, "to keep the extreme parts "warm, eſpecially the feet, and to promote their "ſweating an hour every morning;" for by that means there will be a free circulation of the humours, and nothing repelled to the internal parts which might oppreſs the lungs.

At the ſame time ſuch remedies are neceſſary, which gently deterge the ulcerated parts. Forms of this kind are given in the *Materia Medica* under the preſent aphoriſm, from which may be ſelected ſuch as are moſt ſuitable to the condition of the patient. If the pus be viſcid and tough, and the expectoration difficult, the mixture compoſed of Oxymel ſimplex, vitriolated tartar, and ſyrup of the five opening roots, &c. will be of ſervice.—If there be a dryneſs of the fauces, and a hoarſeneſs, infuſions may be made of maiden-hair, ſcabious, colts-foot, nettles, &c. which may be ſweetened with honey, and drank warm often in a day.—If a tough viſcid mucus oppreſſes the lungs, ſmallage, germander, hyſſop, and other ſuch like attenuants may be directed; to theſe infuſions a third part of milk may be added. By theſe means the blood is ſupplied with a proper vehicle for urine and ſweat, and the abſorbed pus

[a] Theat. Tabed. pag. 121.

happily expelled by theſe outlets. But theſe infuſions ſhould be drank in pretty large quantities by day, not by night, that the patient may not be diſturbed of his reſt.

As balſams are very efficacious in curing external ulcers, phyſicians have recommended their uſe in the cure of ulcers of the lungs alſo. It is true, they cannot there be topically applied, but when taken into the ſtomach they ſoon diffuſe their fragrance over the whole body. Thus after taking turpentine the urine ſoon emits an agreeable ſmell like that of violets. The native balſams are preferable to the artificial ones, ſo greatly extolled by the chemiſts. *Boerhaave*[a], ſpeaking of the artificial balſams, ſays, that they "are hurtful to weak lungs, to the ſtomach and "viſcera; that they ſpoil the appetite, increaſe the "thirſt, and burn up the emaciated body, already "deprived of its moiſture by the phthiſis itſelf," &c. And *Bennet*[b] abſtained from the uſe of them, who likewiſe gives this important caution, "that among "the expectorating detergent remedies, we have "found thoſe moſt ſerviceable which are prepared "from the fir, pine, and turpentine-tree. Acrid "and ſtimulating medicines ſhould be given only in "torpid conſtitutions," &c. But as the native balſams themſelves have a warm aromatic quality, they ſhould be given in a ſmall doſe, and frequently repeated, as they are directed in the formulæ given by our author in his *Materia Medica.*

The ſecond intention is anſwered by ſuch remedies as obtund and weaken acrimony, or deſtroy it by an oppoſite quality. But beſides theſe remedies, phyſicians have endeavoured to carry the matter off by ſweat, urine, and ſtool; for this end to increaſe the natural ſecretions and excretions. But as the urine even in healthy people contains the ſalts and acrid oils of the blood, it has been univerſally allowed, that its ſecre-

[a] Chem. vol. ii. pag. 430. [b] Theat. Tabed. pag. 121.

tion

tion and excretion may ſafely be augmented in order to leſſen the acrimony of the blood and humours. Certainly, all thoſe infuſions of vulnerary herbs increaſe the quantity of urine, as they ſupply the blood with plenty of water, which is one of the beſt diuretics: the native balſams have the ſame efficacy. But phyſicians are more cautious with regard to evacuations by ſweat and ſtool, for phthiſical patients towards the laſt ſtage of the diſeaſe are diſſolved into ſweats, and a diarrhæa with yellow putrid ſtools puts an end to the diſeaſe, and to life together. But in the beginning of the diſorder before the ſtrength is exhauſted, theſe methods have been tried with ſucceſs.

Bennet[a] tells us, that he had learnt by experience that ſudorifics are of great ſervice in the firſt ſtage of a conſumption. He had obſerved, that ſpontaneous ſweats ſometimes break out on the cheſt in the ſleep. In this caſe he adviſes to promote a ſweat all over the body, and aſſerts, that ſuch ſweats are particularly ſerviceable to phthiſical people of a cold conſtitution. At the ſame time he well remarks, that ſudorifics are hurtful in conſumptions of long ſtanding, "as "they remove the materia morbi in part only, and "haſten the attack of the hectic fever[b]." He was likewiſe very careful to obſerve, whether the ſweats were of ſervice or not; for if the cough abated, and the appetite increaſed, they were to be promoted, as they then evacuated acrid particles from the blood.

But it is apparent, that the hotter ſudorifics are not to be uſed here, but ſuch as are gently aromatic, and even thoſe ſhould be infuſed in a large quantity of water. There is a liſt of theſe in our author's Inſtitutes[c]; and in the *Materia Medica*, we find a decoction of the three ſanderwoods, ſaſſafras, &c. two ounces of which are to be taken warm every two hours in the day-time, in the evening on going to

[a] Theat. Tabed. pag. 121. [b] Ibid. [c] Inſtitut. Med. ſec. 1189.

bed

bed four ounces, and early in the morning the ſame quantity. By this method a gentle equable ſweat is uſually procured, by which the acrid particles are ſeparated from the blood, and a mild diluting vehicle afforded to the body.

From hence it appears, that in the beginning of conſumptions, ſome good may be expected from raiſing of ſweats. *Marcellus Donatus* [a] relates ſome caſes, in which a decoction of guiacum had cured a conſumption of long ſtanding.

Phyſicians alſo have ſometimes attempted to evacuate the morbid matter by ſtool, but with great caution, and only in thoſe, "whoſe muſcles were hard, and whoſe "pores were ſhut up," as *Bennet* ſays: for in the height of a phthiſis he adviſes to abſtain from purges, and to uſe only gentle openers, which he calls *minoratives*. His principal aim in purging ſeems to have been to carry off the viſcid ſaburra, or acrid matter, leſt the ulcerated lungs might be further injured by them.

The third intention is anſwered by ſuch remedies as moſt effectually reſiſt putrefaction. Thoſe native balſams which have been already mentioned, beſides their aromatic fragrance, contain alſo an acid, which reſiſts all putrefaction. Myrrh is frequently given to phthiſical perſons, which according to the accurate experiments of Dr. *Pringle* [b] is a moſt powerful antiſeptic, far exceeding ſea-ſalt in this quality. We are indebted to this gentleman for many excellent obſervations tending to elucidate the effects of the remedies generally directed by phyſicians in this diſeaſe.—The chemiſts have taught that putrefaction produces a volatile alkali, and that therefore ſuch things would increaſe this diſpoſition to putrefaction. Nevertheleſs, phyſicians have ordered crawfiſh broth for conſumptive people, and with good

[a] Hiſt. Mirab. pag. 184.

[b] Obſervat. on the Diſeaſes of the Army. pag. 377, &c.

effects,

effects, though they have a kind of urinous ſmell, not unlike a volatile alkali. But *Pringle* has demonſtrated, that alkaline ſalts prevent putrefaction, even more powerfully than ſea-ſalt. He likewiſe found that fixed alkalis had the like qualities. For this reaſon, the *Seltzer* waters which contain a fixed alcaline ſalt, are ſafely and advantageouſly given to conſumptive people, eſpecially if mixed with a third part, or even an equal proportion of milk. *Avicenna* adviſes the eating of ſugar of roſes in great quantities every day, even with bread; and gives us the caſe of a conſumptive woman who was cured by this remedy. He alſo extols troches of camphire. How perfectly does all this agree with Dr. *Pringle*'s obſervations! He has diſcovered a powerful antiſeptic quality in ſugar, and thinks that it is owing to the preſent great uſe of it that putrid fevers are leſs frequent than formerly; and as to camphire, he ſays, that two grains of it were more effectual in preventing putrefaction, than ſixty grains of ſea-ſalt. He likewiſe found a powerful antiſeptic quality in the *Peruvian* bark. *Morton* gave the bark in this diſeaſe, and I have myſelf tried the uſe of it in the beginning of a phthiſis, and have not repented of the trial. I gave it to a lady of quality in various forms, for a long time, who, without an hæmoptöe, was quite emaciated by a troubleſome cough, and a ſlow fever; and although ſhe ſpit pus, and had a male-conformation of the cheſt, yet ſhe perfectly recovered.

Thus we ſee that phyſicians directed ſuch things as had an antiſeptic virtue, both in diet and medicine, although perhaps they were not acquainted with theſe virtues. *Cardan* relates, that he cured a young girl of a conſumption of the worſt kind, by living intirely on ptiſan and water ſweetened with ſugar, and drinking four ounces of a decoction of crab's tails and claws in barley water, with two drams of ſugar. He knew many who were cured by the ſame me-

thod, but particularly by the conſtant uſe of ſugar of roſes.

Small beer without hops, milk-whey acidulated with the juice of wood-ſorrel, China-oranges, pine-apples were directed by *Bennet* as a conſtant drink to phthiſical perſons. Patients who have ſpit a fetid purulent matter have been cured by drinking mineral waters, which, beſides ſteel, contained allum alſo. Now Dr. *Pringle* has demonſtrated that allum poſſeſſes a more antiſeptic quality than other ſalts. Perhaps we might here refer to a caſe related by *Tulpius*[a] of a woman who was cured of a conſumption by eating of raw oyſters, for which ſhe had longed. *Hippocrates*[b] adviſes ſalt meat for promoting a ſpitting in purulent caſes. From all which it is evident, that in a phthiſis pulmonalis, it is of great importance to preſerve the blood from purulent infection.

APH. MCCX.

THE ſecond indication is anſwered by expelling the matter by vulnerary infuſions, by diuretics, by medicines which excite a cough, both internal and external, by exerciſe, riding, and the country air; then by cleanſing the ulcer by the internal and external uſe of balſamaic detergents; and laſtly, by healing it with conſolidating paregories.

The vulnerary infuſions already recommended are here alſo of great uſe, as they abſterge the ulcerated parts, and at the ſame time waſh away from the blood the abſorpt pus, and carry it off by urine. But the evacuation of pus by expectoration is far more ſafe; but this is not to be effected without a cough. For this reaſon, medicines which excite a

[a] Obervat Med. lib. ii. cap. 8. [b] De Locis in homine.

cough

cough are recommended; for by coughing the lungs are cleared; but if it be violent, it irritates the ulcer. Such remedies therefore are to be given as render the pus eaſy to be diſcharged, and yet do not hurt by their ſtimulus.—A decoction of this kind is given in our author's *Materia Medica*. But the ſame expectorating medicines are not alike good in all caſes. *Bennet*[a] gives good advice when he ſays, "ſharp and ſtimulating medicines are to be given "in ſluggiſh conſtitutions,—and then only at ſuch "intervals as require them." Thus, if the ſpit be naturally tough, or if a viſcid mucus be excreted with pus, and with difficulty, then an infuſion of hyſſop with oxymel ſimplex or oxymel ſciliticum will be of ſervice. Plaſters or ointments applied externally to the breaſt can be of little uſe, although phyſicians have ſometimes directed theſe, when the patient has confided in applications of this kind. But ſteams and vapours drawn in with the air in reſpiration may be of uſe, as they every where come into contact with the whole aerial cavity of lungs; and thus various remedies may be applied and ſuited to the various ſtate of the ulcer. *Bennet*[b] ſays, that vapours and fumigations are the moſt uſeful remedies, and relates many caſes to prove their happy effects, and deſcribes the inſtruments by which they may be applied. But it may ſeem ſurpriſing that he ſhould uſe orpiment for a fumigation, as it has been deſcribed by the ancients under the name of arſenic. But what we now call arſenic was unknown to the ancients, and orpiment in many of its qualities reſembles ſulphur, and is improperly called yellow arſenic[c], as it is harmleſs enough. Air replete with ſulphureous vapours, is recommended by phyſicians as very beneficial in phthiſical caſes, and therefore ſend their patients to mount *Tabio*, near *Naples*.—*Bennet*[d]

[a] Theat. Tabed. pag. 121. [b] Ibid. p. 76. [c] Boerhaav. Chem. vol. i. pag. 47. & Hoffman. Obſ. Phyſ. Chem. pag. 259. &c. [d] Theat. Tabed. pag. 125.

attempted

attempted to make ſuch an air by art; and at the ſame time obſerves, that the firſt fumigations give uneaſineſs to the lungs, but that afterwards they bear them with great eaſe. *Mead* recommends fumigations of ſtorax, frankincenſe, &c. I have tried this method in a vomica, and gained my end, for it broke ſooner than it otherwiſe would have done. I contrived a ſteam of hot water to be conſtantly conveyed through a pipe, near the patient's bed, and when I found that he could bear it well, directed it ſtill nearer to him; and I alſo ordered fumigations with frankincenſe, ſtorax, amber, and benjamin, ſo that the air of the room might be impregnated with them, increaſing the quantity gradually; for without this caution a violent cough enſues, which might do great harm. Patients bear the ſmoak of frankincenſe and ſtorax eaſily enough, but amber is more irritating, and melts by the fire into a pretty hot oil, and a volatile acid ſalt. Benjamin, although its odour be fragrant, ſhould be ſparingly uſed, becauſe it has an acrid ſteam. I have uſed the ſteam of benjamin, that the vomica, firſt mollified by watery ſteams, might be broke by a ſudden and violent cough.

Moderate exerciſe, ſuch as the patient can bear, is of great ſervice; for muſcular motion accelerates the return of the venal blood to the heart, which conſequently will be more frequently contracted, and a greater quantity of blood driven with a greater velocity through the lungs, by which means the purulent matter will ſooner be rubbed off and expectorated. At the ſame time reſpiration will be briſker, and the air being more frequently drawn in and breathed out of the lungs, will perform the office of an excellent deterſive remedy, more eſpecially if it be the pure air of a healthy country place. *Bennet*[a] gives excellent rules with regard to exerciſe.

[a] Monit. & Præcept. Medic. p. 47.

Riding

Riding on horſeback is of great efficacy in this as well as in many other chronical caſes; for by riding the whole trunk is perpetually agitated, and the air acts with greater momentum upon the lungs. *Sydenham* greatly recommends riding, and affirms that it is as efficacious in this diſeaſe, as the bark in agues, or mercury in the lues venerea. I have known ſome ſailors and fiſhermen, who having an ulcer in the lungs, became coachmen, &c. and were perfectly cured.

But as this difficult diſeaſe ſo often baffles the art of phyſic, various methods of cure have been tried by phyſicians. Some have placed great hopes in ſuch medicines as have been found efficacious in curing ulcers of the external parts. Hence mercury and decoctions of guiacum have been tried. Some have recommended emulſions made of milk and honey, others, lime-water. When the bark was found ſo effectual a remedy in mortifications, in caries of the bones, and in obſtinate ulcers; phyſicians applied it alſo for the cure of a phthiſis. Dr. *Mead*[a] adviſes the uſe of it, when either a ſpitting of blood, or a defluxion of thin phlegm returns at ſtated times, but he warns us againſt it, when an ulcer is already formed in the lungs. An anonymous author in the Medical Eſſays[b] adviſes to attempt the cure by frequent bleedings, if the body be not quite exhauſted; but he would not have the patient bled before the vomica is broken. Dr. *Mead*[c] confirms this method by his own authority, and would have us check the diſeaſe in its beginning by repeated bleedings. His words are, "if the blood let out is thick, black, or "viſcid, it is bad, and ought to be let out; if it is "red and bright, it is reckoned good, and no "more is to be taken away." Dr. *Pringle* confirms the propriety of this method; yet ſays, by way of

[a] Monit. & Præcept. Medic. pag. 47. [b] Vol. iv. pag. 418, & ſeq. [c] Ibid. pag. 50.

caution,

caution, that he would not from thence eſtabliſh a general rule for the cure of this diſeaſe. He likewiſe avers that he had ſeen great ſervice done by frequent bleedings in the cure of wounds, when from pus abſorbed a hectic fever was produced; but this was certain, that a putrid cacochymy was leſſened by bleeding.

The third and laſt indication of cure is to conſolidate the ulcer. This is effected by very ſoft decoctions of healing remedies with ſuch as correct acrimony; of which kind there is a formula in our author's *Materia Medica*. But the chief dependance is upon anodynes given in the evening, for then the cough is generally moſt troubleſome, and likewiſe dry, and none or very little digeſted pus ſpit out. Anodynes ſtill the cough, procure ſleep, which recruits the ſtrength, and in the morning laudable pus is brought up by a gentle cough. Without a prudent uſe of theſe, I ſcarce ever hope for ſucceſs. Some are afraid, leſt the expectoration ſhould be ſuppreſſed by opiates; but I can truly aſſert, that after a quiet ſleep, I have always obſerved a more eaſy expectoration, and that the pus brought up had every requiſite good quality. This method indeed makes the patient coſtive, but it is of no bad conſequence in this ſtage of the diſeaſe, as ſtools may be procured by an emollient clyſter.

APH. MCCXI.

THE third indication is anſwered by ptiſans, broths, and various preparations of milk.

Although ptiſans may be made with various kinds of corn, yet when ptiſan is ordered, it is ſuppoſed to be made of barley. If this decoction was given with the barley in it, it was called *whole ptiſan*; if the water was ſtrained from the barley, it was then called juice

juice of ptiſan; and when it was boiled to a greater thickneſs, it was called cream of ptiſan, which is made at this day in another manner, namely, by preſſing the boiled barley with a wooden ſpoon through a hair ſieve, and then mixing it with the decoction. Thus a barley pap is made which has the conſiſtence of cream, and affords a mild, moiſt, ſoftening food, that does not putrefy. But as beer is made from barley, it is allowed to ptiſical patients in theſe countries where it is the common drink; but it muſt be, as *Bennet* ſays, without hops, very clear, and not very old, or medicated with comfrey-root, nettle-tops, marſhmallows, endive, &c.

Broths are alſo juſtly in eſteem, for the fleſh of an healthy animal contains copious materials for nouriſhment, and ſuch too as eaſily diſſolve in water, and may be aſſimilated by the weakeſt veſſels and viſcera. It is true, that all animal food has a tendency to putrefaction; but this is eaſily corrected by orange-juice, or cream of barley, rice, &c.— Beſides, the fleſh of animals which feed on vegetables affords broth much leſs putreſcent, than thoſe which are made of the fleſh of carnivorous animals. Broths made of the fleſh of turtles and frogs have been recommended, and *Bianchi* atteſts, that he cured many patients with broth of this kind. See Aph. 28. No. 1.

Milk is directed by all phyſicians; that drawn from the breaſts of a healthy young woman is the beſt, next to that is aſſes milk, then goat's, though cow's milk is ſometimes uſed. *Aretæus* deſcribes the excellent qualities of milk in a few words, in a fragment which is left of him, wherein he treats of the cure of a conſumption[a]. However, many of the beſt phyſicians do not allow the uſe of milk without ſome caution. *Hippocrates*[b] forbids milk when there was much fever, and alſo when the patient was greatly ema-

[a] Lib. i. cap. 8. pag. 127. [b] Aph. 164. ſect. 5.

ciated. *Trallian*[a] gives the ſame cautions; but they did not abſtain from milk on account of that ſlight continual fever called a hectic. *Bennet*[b] does not approve of milk at all times, "but to ſuch as have "been accuſtomed to it,—and eagerly long for it;" and "in a confirmed phthiſis, he thought it abſo-"lutely neceſſary to forbid the uſe of it." He thought whey alone, properly medicated, ſufficient for every indication, and relates two caſes, where the ſtomach and inteſtines were found full of hard curds, from the uſe of milk[c].

APH. MCCXII.

THE palliative cure of a phthiſis chiefly regards the cough, the anxieties, and the diarrhæa.

APH. MCCXIII.

THESE are to be relieved by the diet directed at Aph. 1211, by opiates prudently adminiſtered, and by warm liquors.

The cough always increaſes towards the evening, when the hectic fever becomes more intenſe, and the blood moves with greater celerity through the yet unobſtructed veſſels of the lungs. Hence an intolerable anxiety or oppreſſion; all which ſymptoms are exceedingly augmented when a great quantity of crude chyle is carried to the lungs with the venal blood.—To render theſe ſymptoms more tolerable, the diet preſcribed at Aph. 1211, muſt be ſtrictly obſerved. At the ſame time, plenty of thin warm drink may be taken to dilute the fluids, that they may

[a] Lib. vii. pag. 309. [b] Theat. Tabed. pag. 72. [c] Ibid. pag. 151.

more

more eaſily paſs through the lungs, and thus abate the anxiety. But opiates are almoſt the only remedy for appeaſing the cough, and to prevent, or at leaſt to check the diarrhæa. A clyſter prepared of the following medicines ſeldom fails to relieve the patient.

℞ Terebinth. puriſſim. ʒj. Solv. cum vitel. ovi q. s. cui ad. Theriac. Androm. ʒß. Lact. recentis ʒiv. M. s. a. ut f. Enema. Monendus eſt æger, ut diu retineat.

Of other CONSUMPTIONS.

APH. MCCXIV.

THOUGH a phthiſis is generally produced by an ulcer of the lungs, yet it may ariſe from ulcers in the liver, ſpleen, pancreas, meſentery, kidneys, uterus, bladder, &c.—The diagnoſis, prognoſis, effects, cure, and palliation, of all which, may be eaſily deduced by a phyſician who underſtands the natural operations of each viſcus.

Pus lodged in any of the viſcera, may produce all the bad conſequences which ariſe from an ulcer of the lungs; but as the lungs are a vital part, their diſeaſes are much more dangerous. However, the curative indications are nearly the ſame with thoſe enumerated at Aph. 1208. For ſuch abſceſſes are quickly to be brought to maturity, and when mature, to be opened or broken, and the pus to be diſcharged by the moſt convenient paſſages.—In an ulcer of the lungs the pus is to be diſcharged by the aſpera arteria. In an

abſceſs of the liver by the inteſtines, and thoſe alſo of the ſpleen and pancreas by the ſame paſſage. Ulcers of the kidneys and bladder are evacuated by the urinary paſſages,—thoſe of the uterus by the vagina. But the ſame cautions are required, and the ſame remedies are proper to defend the blood from the purulent infection. It is right alſo to keep to a diet of eaſy digeſtion, and not liable to grow putrid.

As to the diagnoſtic ſigns, theſe may be known from the ſituation and ſtructure of each of theſe viſcera. If, for inſtance, an abſceſs be formed in the liver, and the ſymptoms ſhew that it may diſcharge itſelf outwardly, then the region of the liver ſhould be fomented, and cataplaſms applied to it. Ulcers of the bladder, uterus, and vagina, may be cleanſed by injections; but a vomica of the kidneys, by mild, balſamic diuretics, ſuch as the native balſams. The prognoſtics are likewiſe to be drawn from the ſtructure and uſe of the parts: thus ulcers of the kidneys and bladder may be borne much longer, and even more eaſily cured, than thoſe of the liver and ſpleen; as pus may be ſooner diſcharged from the kidneys and bladder than from the liver and ſpleen. Beſides, the liver and ſpleen are more eaſily conſumed by an ulcer; and there is danger leſt one in theſe parts ſhould diſcharge itſelf into the cavity of the abdomen, and being there retained, ſhould cauſe a purulent aſcites.

Of

Of the Dropsy.

APH. MCCXV.

WHEN watery ſerum is extravaſated and lodged in the cavities of the body, or when ſtagnating any where, it over-diſtends the veſſels which contain it, the diſorder is called a dropſy.

A dropſy is a general name, under which many ſpecies of the ſame diſeaſe are comprehended; the diverſity of which principally ariſes from the various parts of the body which this watery ſerum occupies, and from whence it obtains various names.—It is evident from chymiſtry that water does not only abound in healthy fluids, but is ſo intimately combined alſo with the ſolids, that the horns of ſtags kept for ages, yield plenty of water, when diſtilled in a retort. But when, from any cauſe, this intimate combination of the water, both with the fluids and ſolids, is diſſolved, then there is danger, leſt the water ſhould eſcape through the veſſels in which it moves, and fall into the cavities of the body; or, if an exit be denied it from the extremities of the veſſels, it will diſtend theſe veſſels, and thus produce a dropſy either way, unleſs it be exhaled from the body by ſome other paſſages.

But although this diſeaſe derives its name from water, yet that fluid, which in dropſical perſons is collected in the larger and ſmaller cavities of the body, has all the appearances of ſerum mixed with blood. Hence it is called a *watery* ſerum, becauſe it is not pure ſerum; for when put on the fire, a part thereof evaporates in the air, and part congeals like the white of an egg: which effects are alſo produced by fire upon the ſerum of the blood.

No one at this day doubts that there are veſſels in the body, through which fluids, thinner than red blood, circulate; ſo that if the free paſſage of theſe fluids be obſtructed, the veſſels will be diſtended, and thus a dropſical ſwelling produced. But thoſe arterial veſſels, at their very beginning have ſo ſmall a diameter, that they cannot admit a globule of red blood; ſo that very great ſwellings can ſcarcely be cauſed from obſtructions of theſe veſſels. But the caſe is different in the venous veſſels which carry the lymph back towards the heart, and pour it into the larger veins, or into the ductus thoracicus, which may be accounted the vena cava of the lymph. If from any cauſe the free return of the venous lymph towards the heart be hindered, the larger and ſmaller cavities of the body may be filled with water, and the lymphatic veſſels diſtended.

APH. MCCXVI.

WHICH therefore may take place wherever there are veſſels containing this ſerum, that is, all over the habit of the body, and in every particular part thereof.

APH. MCCXVII.

HENCE the diſeaſe is called hydrocephalus, when the watery ſerum lodges between the external integuments themſelves; between them and the ſkull; between the ſkull and the membranes of the brain; between theſe membranes themſelves, or their duplicatures; between theſe and the brain; between the foldings of the brain, or in the cavities thereof, without however cauſing ſudden death.

An

An hydrocephalus properly denotes a dropſy of the head, however, a watery collection of ſerum in the head has not always this appellation. In lethargies, or what is called the cold apoplexy, watery ſerum is collected in the ventricles of the brain, yet no one will call this diſeaſe an hydrocephalus; for the bulk of the head is not in this caſe enlarged. An hydrocephalus, therefore, is generally a diſeaſe of infancy, and great care ſhould be taken to diſcover it in the beginning, or otherwiſe it will be difficult to cure. In new born children, the ſkull is not intirely oſſified, but oſſifies when the child grows older, ſooner or later in different ſubjects. Whence, it is eaſily ſeen, that when a fluid is collected in the cavity of the ſkull, the bones continually recede more and more from each other, and thus the ſize of the head may be ſurpriſingly increaſed. An hydrocephalus ſeated in the external parts of the head only, is rarely ſeen. *Ætius* [a], under the name of an hydrocephalus, has deſcribed ſwellings ariſing from a contuſion on the outſide of the head. *Stalpart Vander Wiel* [b] ſays, "that ſuch kinds of hydrocephali are "cauſed by violence, or ſome external cauſe, and "that in theſe ſwellings, the lymph is always muddy "and turbid, or even bloody; whereas in internal "hydrocephali, the lymph is always clear."

It is moreover to be remarked, that there is found ſometimes in new born infants, a ſoft ſwelling of conſiderable ſize near the occiput. I have ſeen ſome of this kind, and all the children who had it, died. *Ruyſch* [c] ſaw ſuch tumours, and once one ſo prodigious, that it was bigger than the new born infant itſelf. He likewiſe remarks, that the fluid contained in theſe tumours, has a communication with that lodged in the ventricles of the brain.—But as all the contents of the cranium are always found moiſt in

[a] Lib. vi. cap. 1. [b] Obſervat. rar. Tom. ii. pag. 123.
[c] Obſ. Anat. Chirur. pag. 50.

thoſe who die a violent death, no one will wonder that watery ſerum may be collected there, and that in various parts thereof; but moſt frequently in the ventricles of the brain, as may be gathered from many obſervations. Certainly the dura mater adheres firmly to the cranium, ſo that it cannot be torn from thence without a conſiderable force, and therefore it will be more difficult for ſerum to be accumulated between the cranium and this membrane, than itwill be between it and the pia mater: for although theſe membranes are contiguous to each other, yet they do not naturally ſtick together, a moiſture being conſtantly interpoſed. The membrana arachnoides, which lies cloſe to the pia mater, is of a cellular ſubſtance; and if it be ſkilfully pierced with the point of a lancet, may be eaſily inflated and diſtended with air; lymph may therefore be collected between this membrane and the pia mater, as I have ſometimes ſeen in thoſe who have died of a lethargy: there is then an appearance, of a kind of gelatinous ſubſtance about the brain, as the collected lymph is every where diſtributed through innumerable little cells, although, when a puncture is made, thin lymph flows out. Many obſervations may be read in *Stalpart Vander Wiel* [a] concerning water collected in various internal parts of the head; but one which moſt remarkably evinces the truth of this, is the accurate examination of the head of a fœtus by *Henr. Velſc* [b].

Numerous obſervations ſhew, that lymph contained in the ventricles of the brain is the cauſe of an hydrocephalus, but what ſeems moſt wonderful is, that ſo great a quantity of lymph can be contained in the cavity of the ſkull. *Veſalius* [c] ſaw at *Augſburg* a girl of two years old, whoſe head, in ſeven months time, had increaſed to a wonderful ſize; and after death, near nine pints of water were found in

[a] Obſerv. Rarior. Tom. ii. pag. 112, & ſeq. [b] Differt. Miſcell. Anat Pract. pag. 39. [c] De Corp. Hum. Fabrica. pag. 17.

the

the ventricles of the brain. *Tulpius* [a] ſaw an hydrocephalus in a boy of five years old, in which the ſwelling contained five pints of water.

APH. MCCXVIII.

IT is eaſy to know, that the laſt kind is incurable; the others may be cured by ſlight burning, trepanning or puncture, cautiouſly and gently applied; and by the uſe of internal hydragogues, and ſtrengtheners; or they may be diſſipated by external diſcutients.

Petit has remarked, that this diſeaſe ſometimes ariſes after difficult breeding of the teeth, or violent convulſions; and alſo when children have been much troubled with worms. In the beginning of the diſeaſe, the lips and eye-lids are ſlightly convulſed; the patient bites his lips, gnaſhes his teeth, and rubs his noſe. The belly is either too much bound, or too lax. The eyes appear languid; the pupil is uncommonly dilated; the patient grows pale, weak, melancholy, and languid. The principal ſigns which ſhew the diſeaſe approaching are ſtupidity and ſleepineſs, certain ſymptoms, that the brain is already oppreſſed by the watery ſerum collected in the head: then as the diſorder increaſes, the bones of the head begin to recede from each other, the ſize of the head increaſes, and leaves no room to doubt of the exiſtence of the diſeaſe. Beſides the above mentioned ſigns, I have ſometimes obſerved, that patients afflicted with this diſeaſe, cannot bear to hold their heads erect without crying out, but as ſoon as they lean back their head, ſupported by a pillow, they are eaſy, but ſtupid. I have ventured from theſe ſigns to foretel an accumulation of watery ſerum in

[a] Obſerv. Lib. i. cap. 24.

the

the ventricles of the brain, although the ſize of the head was not remarkably enlarged.

Hippocrates [a] has deſcribed the ſigns which denote a collection of water in the brain of a grown perſon, but he does not mention as one, the increaſed ſize of the head. His words are, "an acute pain infeſts "the ſinciput and temples, and ſometimes other "parts of the head; they have at times ſhiverings, "and a fever. A pain is felt about the orbit of the "eyes, they grow dim; the pupil ſeems to divide, "and they ſeem to ſee double. If they riſe up they "are ſeized with a giddineſs and dimneſs of ſight." If theſe ſymptoms are compared with thoſe which *Petit* obſerved in the bodies of perſons who died of this diſeaſe, the reaſon of theſe ſymptoms will be ſufficiently evident. He found the dura mater adhering more firmly than uſual to the cranium, the baſis flattened, and as it were depreſſed, the orbits of the eyes, and the eyes themſelves thruſt outwards.

When from theſe ſymptoms, I ſuſpected that water was lodged in the internal parts of the head, I ordered the hair to be taken off, and recommended gentle friction, which the patient eaſily bore. I then directed that the head ſhould be covered with a ſoft aromatic plaſter, ſuch as the emplaſtrum de labdano or meliloto of the ſhops; this was removed twice or thrice a day, that the head might be rubbed. I ordered the part behind the ears to be rubbed till they became red; for we frequently ſee a quantity of matter oozing from behind the ears, and indeed from the whole ſkin of the head, which, if it be imprudently ſtopped, the brain is ſoon affected, and all its functions diſturbed.

I tried this method on a girl of nine months old, and was pleaſed to find a conſiderable moiſture near the right ſide of the fontanella, and the ſkin of the whole head, and particularly behind the ears, con-

[a] De Morbis, Lib. ii.

ſtantly

ſtantly bedewed with ſo much moiſture, that the child's caps were frequently changed on this account. I carefully examined the head every day, and found it did not increaſe in ſize. I uſed at the ſame time, ſuch gentle phyſic as ſuited the tender age of the patient; but all was to no purpoſe; for the child died in a fortnight after a few ſlight convulſions.

Bags filled with cephalic herbs, ſuch as ſage, roſemary, lavender, &c. are ſometimes applied to the head, to which it is uſual to add a quantity of decrepitated ſea-ſalt, which ſoon draws moiſture of itſelf, even from the very air. At the ſame time a gentle and cautious compreſſion of the whole head, ſupports the parts, and enables them to reſiſt too great a diſtenſion. For this end a cap of *Turkey* leather is uſually prepared, which is drawn gently together by buckles, ſo as rather to ſupport the parts, than ſtrongly to conſtringe them; but this is to be uſed in the beginning of the diſeaſe only; for when the hydrocephalus comes to a conſiderable bulk, ſuch a compreſſion might cauſe a fatal apoplexy.

Cathartics are given frequently, that the body being exhauſted of fluids, the veins may more readily reſorb the extravaſated lymph. When the collected water is lodged between the integuments and ſkull, it may eaſily be evacuated by ſcarification, or by burning, which leaves an ulcer longer open, and by which the watery ſerum continually flows; but, when it is lodged in the cavity of the ſkull, the difficulty is much greater. If it lodges in the cavities of the brain, it cannot be drawn from thence by puncture; but if the water be collected between the meninges, it would indeed be eaſy to pierce there: but when the water was drawn out, the ſoft bones, united only by a membranous ſubſtance, would collapſe and compreſs the brain, when the head was laid on a pillow. But almoſt all obſervations ſhew, that puncture is fatal in an internal hydrocephalus; and *Petit* laments that all who underwent this operation died.

Nay,

Nay, if the lymph contained in the ventricles of the brain could be drawn off without injuring the brain by the wound, yet it ſhould ſeem that the parts would collapſe on the evacuation of the lymph, and deſtroy the functions of the brain. This ſeems confirmed by that diſeaſe in new-born infants called the *ſpina biſida*, or double ſpine, becauſe the articulations of the vertebra ſeem to open, and a ſoft tumour of a various ſize grows there, ſometimes containing a clear water, ſometimes a darker fluid, and the integuments ſometimes keep their natural colour, but more frequently they are red or rather livid. *Ruyſch* [a] deſcribes this diſeaſe, and aſſerts "that it is a dropſy "of a part of the ſpinal marrow, and is almoſt the "ſame diſorder with that which in infants is called "an hydrocephalus."

This tumour appears in the back or loins, and ſometimes, but indeed ſeldom, in the nape of the neck, and very rarely in the lower and exterior part of the os ſacrum; which ſurprized *Ruyſch*, as the lower part of the os ſacrum, even in a natural ſtate, has an opening in its back part. Perhaps the water contained in the *ſpina biſida* deſcends from the ventricles of the brain, for we know that the fourth ventricle is continued along the medulla ſpinalis. There is an obſervation in *Wepfer* [b] which ſeems to confirm this opinion. A girl whoſe head was well formed, had on the back towards the right ſide of the upper vertebræ of the loins a livid bright ſpot, about five inches long and three broad, which daily increaſed in ſize, but yet not to exceed the thickneſs of the finger, and at the ſame time it grew ſo bright as to ſhine like a mirror. Her right foot was immoveable from her birth. On the tenth day after ſhe was born, as the water was viſible through the ſkin, the ſurgeon made a very ſmall inciſion, from which

[a] Obſerv. Anatom. Chirurg. Centur. pag. 33, & ſeq. [b] De Affect. Capit. pag. 56.

iſſued an abſolutely lympid water. The wound ſoon cloſed, which the mother afterwards opened ſix times with her nails, and diſcharged from it three ounces of water at each time:—but as ſoon as the part was cicatrized, and the ſpot diſappeared, firſt the right frontal bone, and then the left, began to protuberate, and an hydrocephalus of a vaſt ſize appeared when the child was about a month old. It is evident, this lymph iſſued from the ventricles of the brain, and its exit being hindered, the head began to fill by its accumulation, and was every way diſtended. The cure therefore can be only palliative, and conſiſts in taking care, that the integuments be not broken, but rather rendered firmer by aſtringent and ſtrengthening fomentations, that the tumour may remain longer whole. For if it breaks of itſelf, or is imprudently opened, the death of the patient is haſtened.

APH. MCCXIX.

IN a dropſy of the cheſt, where water may be collected from various parts, the ſymptoms are almoſt the ſame with thoſe of an empyema, but obſervation of the antecedent cauſes will diſcover the difference between them. Tapping cures this kind of dropſy, giving at the ſame time, ſuch remedies as are oppoſite to its cauſe.

Dr. *Kaau*[a] has demonſtrated, that the external ſurface of the lungs, the pleura, the mediaſtinum, the pericardium, the heart, and its auricles, perpetually exhale a vaſt quantity of moiſt vapour. The circulation of the blood is ſwifteſt of all through the coronary arteries, hence the heart continually emits

[a] Perſpirat. dicta Hippocrat. pag. 239, & ſeq.

from

from its whole ſurface a great quantity of this thin moiſt vapour. For this reaſon a larger quantity of fluid is found in the pericardium than in any other cavity of the body in proportion to its ſize. But although all the internal parts are moiſtened with a kind of ſubtle vapour, yet no fluid is found collected in them in a healthy ſtate, nor ſoon after death: therefore this moiſt ſteam exhaling from the arteries, is abſorpt by the veins, and theſe abſorbent veins empty themſelves into the thoracic duct, or into the veins which contain the blood [a]. But it further appears by Dr. *Muſgrave*'s experiments, related in the 3d. Vol. of the Philoſophical Tranſactions abridged, that water itſelf collected in the thorax may be abſorbed by the veins.

We ſhall ſpeak of the cauſes of a dropſy at Aph. 1228. It will be ſufficient to obſerve here in general, that every cauſe which may obſtruct the ſpeedy abſorption of the exhaling moiſture by the veins, may be a cauſe of a dropſy of the cheſt. Hence, the reaſon is plain, why after a ſpaſmodic aſthma of long continuance, a dropſy of the cheſt ſo often follows. For in this kind of aſthma, the right ventricle of the heart is incapable of propelling the blood through the lungs, on account of the conſtriction produced by the ſpaſm.

Perhaps, there is not a more frequent cauſe of this watery collection in the cheſt, than drinking of cold liquor when the body is over-heated, or ſtaying too long in a cold air without exerciſe: for ſuch ſudden cold conſtringes the orifices of the veſſels, eſpecially thoſe of the venal abſorbents, rather than the ſmall exhaling arterial veſſels, becauſe the veins have thinner coats than the arteries, as alſo becauſe the motion of the fluids through the arteries towards their extremities, keeps them open, or opens them, if they have ſuffered any degree of conſtriction. But

[a] Perſpirat. dicta Hippocrat. pag. 274, 279.

the

the caſe is different with the veins, for if they are once contracted by cold they cloſe more eaſily; and if this happens in a great number of abſorbent veins, an incurable dropſy will be occaſioned, asthe abſorption cannot then be reſtored.

It is well obſerved in the text, that lymph may be collected in various parts of the thorax; namely, in the right and left cavity, in the pericardium; behind, without the pleura near to the vertebræ: before, under the ſternum, between the two lamellæ of the pleura. Theſe different ſeats of a dropſy ought to be accurately diſtinguiſhed, both becauſe they produce different ſymptoms, and require different methods of cure. For if the lymph be lodged in either cavity of the thorax, it may be drawn off by tapping,—if in the pericardium, by puncture,—if under the ſternum, by a perforation there. But if it be collected in that triangular cavity formed by the membranes of the pleura receding from each other near the vertebræ of the thorax, it will make itſelf a paſſage by its own weight through the cellular membrane, which inveſts the dorſal muſcles, and fill up their interſtices.

As a dropſy of the breaſt is attended with many ſymptoms reſembling thoſe of an empyema, great attention is required to find out the diagnoſtic ſigns. For a fluid contained in the cavity of the breaſt, be it pus or watery ſerum, will equally compreſs the lungs, and hinder their free motion. *Albertini* [a], by careful obſervation and diſſection of bodies, aſſures us, that pure water does not occaſion ſo great a difficulty of breathing unleſs it fills both the cavities of the breaſt, as water that is turbid, of a deep yellow, or very acrid. But if we attend to the antecedent cauſes, we ſhall then be able to make the proper diſtinctions. For inſtance, if ſigns of ſuppuration follow an inflammation of the breaſt, attended with a difficulty

[a] Inſtitut Bonon. Tom. i. pag. 393.

of

of breathing, we may readily conclude that matter is formed. But if thoſe cauſes have preceded which generally produce this diſeaſe, we may then pronounce it to be dropſical. If either cavity of the breaſt be filled with water, the patients cannot lie on the oppoſite ſide: if in both the cavities, they more eaſily bear an erect poſition, the body being bent a little forwards. *Piſo* [a] mentions another ſign which he held for a true pathognomonic, namely, "a "difficulty and quickneſs of breathing which ſud- "denly comes on about bed-time, and deprives the "patient of reſt, but as the day approaches, gradu- "ally abates."

Lymph has been obſerved to be collected in the pericardium, but this collection of lymph never happens in healthy animals; nor is it true, as was formerly believed, that a quantity of fluid was contained in the pericardium to moiſten the heart, for this fluid is only found when the body is grown cold after death.—It is not eaſy to fix the diagnoſtic of a dropſy of the pericardium, as it has many ſymptoms in common with a dropſy of the cheſt, with diſorders of the lungs and heart, &c. But a ſenſe of oppreſſion and ſtraitneſs about the fore part of the cheſt ſeems to be the moſt diſtinguiſhing ſign, as the ſeat of the pericardium is there. At the ſame time, it is evident, that the lungs, which are ſo near the pericardium, muſt be compreſſed,—the breathing more difficult, and the dry teazing cough more frequent. From this vicinity of parts, both the motion of the diaphragm and the heart will be diſturbed, whence palpitations, inequalities of the pulſe, and ſyncopes, preceded by a ſenſe of ſuffocation. *Senac* [b] enumerates the ſymptoms of this diſeaſe, and adds one which ſeems more certain than any of the reſt, namely, "an undulatory motion per-

[a] De Morb. a Scroſa Colluvic. pag. 243. [b] Struct. du Coeur. Tom. ii. pag. 356, & ſeq.

ceivable

ceivable between the 3d, 4th, and 5th ribs when the heart palpitates.—Hence it is plain, that a dropſy of the cheſt has its ſeat principally in three cavities, the pericardium, the right and left cavity of the breaſt; for that part of the mediaſtinum, in which the thymus is placed, is very ſmall, and I do not remember to have ever read of a dropſy ſeated there.

Water collected in the cheſt is drawn off by puncture, which operation is called paracenteſis, or tapping; and although it does not remove the cauſe, it certainly frees the patient from the danger of inſtant ſuffocation, and gives the phyſician time to attack the cauſe of the diſeaſe by ſuitable remedies. This operation has been condemned, and was once baniſhed the practice of phyſic on account of the bad ſucceſs which attended it. *La Motte* [a] poſitively aſſerts, that all dropſies of the thorax are fatal, and condemns the paracenteſis. Nevertheleſs, this operation has been performed, both by ancient and modern phyſicians, with great ſucceſs. *Hippocrates* [b] adviſes tapping, and from his expreſſions, it ſeems probable, that ſome patients were recovered by it. He likewiſe deſcribes the operation as it was performed in his time, and gives the diagnoſtic ſigns of the diſeaſe.

It was a long time a general rule not to let out the water from the cheſt all at once, but at different times. *Hippocrates* followed this method, and aſſerts in his Aphoriſms, that "thoſe who are cauterized "for a dropſy or an empyema, if the water or pus "flows out all at once, they die [c]".—*Galen* affirms the ſame thing in his commentary upon this Aphoriſm, and ſupports it by the authority of *Eraſiſtratus*. And as a ſcirrhus is often the cauſe of a dropſy, he feared, that the ſcirrhus no longer ſupported by the water, ſhould oppreſs the diaphragm by its weight, or ſome of the viſcera near the thorax. But there is

[a] Traité compl. de Chirurg. Tom. ii. pag. 189. [b] De Morbis, Lib. ii. [c] Sect. vi. Aph. xxvii.

much more danger in drawing the water off at ſeveral times, as the air may get into the cavity of the thorax, and haſten the putrefaction of the extravaſated fluid.

But the obſervations of the moderns alſo ſhew the utility of the paracenteſis in dropſies of the breaſt, even in caſes where there ſeemed to be but little hope. *Du Verney*[a] relates the caſe of a woman whoſe pulſe was low and unequal, her reſpiration very difficult; and had not only a dropſy of the breaſt, but alſo an aſcites, who was cured by the operation of the paracenteſis. He firſt emptied the abdomen by tapping, and ſome days after, he pierced the thorax with a trochar, between the ſecond and third ſpurious rib, as near to the ſpine as he could. *Bianchi*[b] gives us the hiſtory of the ſame operation ſucceſsfully performed upon a ſtout young man; but he confeſſes that he has not often ventured upon it.

Nor is *Bianchi* alone fearful in this matter. *Senac* complains that phyſicians leave people in this diſeaſe to their fate, though his own experience convinced him of the utility of the paracenteſis, and relates a caſe in which it ſucceeded. *Morand* alſo laments, that in *France*, where ſurgery is ſo much cultivated, this operation was rarely uſed for the cure of this diſeaſe. Yet this celebrated ſurgeon, in a deſperate caſe, drew off at once ſix pints of water. Towards the end of the operation a conſiderable quantity of pus followed, and the patient revived inſtantly. In a week after, the ſame oppreſſion of the breaſt returned with inſupportable violence. A paſſage was opened to give vent to the extravaſated fluid, not by the trochar, but by an inciſion made in the intercoſtal muſcles, as in an empyema. Five pints more of water came out; and towards the end, a greater quantity of pus than before; and although the pa-

[a] Academ. des Sciences. l'an. 1703. pag. 199. [b] Hiſt. Hepat. Tom. i. pag. 662.

tient

tient was in danger of a maraſmus, yet he recovered at laſt of this dangerous diſeaſe. See Aph. 304, where we treated of wounds of the thorax.

Phyſicians ought to be cautious in preſaging what fluid will come out upon tapping the thorax, eſpecially if inflammatory diſorders have preceded. In the caſes juſt mentioned there was both a watery ſerum, and a conſiderable quantity of pus: ſometimes alſo, other vitiated humours lie concealed in the cheſt. But let what will be the nature of the fluid, the method of cure is the ſame, namely, to remove that which ſtraitens the breaſt, and oppreſſes the lungs.

APH. MCCXX.

THE lungs have been alſo ſometimes oppreſſed with hydatides, ſometimes with dropſical vomicas or abſceſſes, from lymph extravaſated and lodged in the larger ſinuſſes. This is a diſeaſe certainly difficult to diſcover, and to cure, unleſs the remedies taken to remove ſome of the preſent ſymptoms, ſhould fortuitouſly produce a cure of this kind of dropſy.

A dropſy of the lungs themſelves is a very ſurpriſing diſorder, and not eaſily diſcovered. This viſcus conſiſts of veins and arteries, and of air-veſſels. But watery ſerum cannot be collected in veins and arteries, through which the fluids are continually propelled, nor in the air-veſſels, becauſe fluids lodged there would be immediately expelled by a cough; or, if that failed, the patient would be inſtantly ſuffocated. But anatomy demonſtrates that theſe three kinds of veſſels are united together by a cellular membrane, which has no fat in it; and in this membrane extravaſated lymph may be collected

as well as in other parts of the body, and produce a real dropſy of the lungs, whenever that ſubtile vapour perpetually exhaled by the arteries, is not taken back into the blood by the abſorbent veins. Now the lymph thus diſtending, the cellular membrane may form tumours of various ſizes, watery vomicæ, or hydatides; and by compreſſing the adjacent veſſels, particularly the membranous extremities of the bronchia, diſturb the action of the lungs.

Ruyſch found in the lungs of three aſthmatic patients a collection of tranſparent bladders diſtended with air, which he could not force out by a ſlight compreſſion; nor had the air blown in by the aſpera arteria any communication with that in theſe diſtended bladders, which he believed to be a more frequent cauſe of an aſthma than was generally imagined. See Aph. 1062.

Albertini[a] obſerved ſuch a ſwelling of the lungs, and ſays, that reſpiration will be more impeded by a ſmall quantity of ſerum collected in the interſtices of the lungs, than by a greater, extravaſated in the cavity of the thorax; and he farther remarks, that ſerum accumulated in the lungs is much more eaſily carried off, than from the cavity of the breaſt; for he had ſeen many patients, who from various cauſes ſuddenly ſwelled all over, eſpecially in the extreme parts, attended with a great difficulty of breathing, who yet recovered by the uſe of gentle hydragogues, diuretics, &c. From whence he concluded, that their aſthmatic complaints aroſe from an œdema, or ſwelling of the lungs. Dr. *Simſon*[b] always ſuſpected a dropſical ſwelling of the lungs, when the face became turgid, the ankles ſwelled, and the breathing difficult; but more eſpecially when the pulſe was ſo ſuppreſſed as ſcarcely to be felt. He happily

[a] Inſtitut. Bonon. tom. i. pag. 392, 393. [b] Medical Eſſays, vol. v. part 2. pag. 627, &c.

cured

cured a woman who had ſuch a dropſical ſwelling of the lungs, and in danger of ſuffocation, by giving her a doſe of mercurius dulcis.

Maloët[a] relates a curious hiſtory of this diſeaſe. A ſoldier was afflicted with a very ſevere aſthma, attended with a ſlow fever. He could neither lie on his back, or either ſide, without the greateſt uneaſineſs, and was therefore obliged to keep in an erect poſture. His arms, hands, legs and feet were œdematous: hence this excellent phyſician ſuſpected a dropſy of the cheſt, but finding no fluctuation, nor the patient himſelf ever perceiving any thing like it, and as there were no other ſymptoms which uſually attend this diſeaſe, he changed his opinion. The poor man, after languiſhing for two years, died. Upon opening his body, no extravaſated ſerum was found in the thorax, but a watery vomica in each lobe of the lungs, which contained about ſix ounces of tranſparent ſerum incloſed in a particular kind of cyſt, whoſe ſides were about a line in thickneſs, and compoſed of different lamellæ lying one upon another, in which there was not the leaſt appearance of either fibre, veſſel, or gland; yet they could bear to be ſtretched lengthwiſe, and contract themſelves again by their own elaſticity: but being roughly handled by the fingers, they became a perfect mucus. It is likewiſe judiciouſly obſerved, that the extravaſated ſerum was not lodged in the bronchia, but in the cellular membrane which fills up the ſpaces between the greater and ſmaller lobes of the lungs.—This obſervation confirms the diagnoſtics mentioned above.

Maloët ſeems to think that the lamellated membranes which formed theſe cyſts, were not of an organical ſtructure, but formed from the contained fluid, as neither fibres nor veſſels were viſible in them. Very great anatomiſts have been of opinion that the ſubſtance of the cellular membrane is not properly

[a] Acad. des Sciences l'ann. 1732. pag. 350.

vaſcular, at leaſt, that veſſels have not yet been demonſtrated in this part; but numerous veſſels are diſtributed all over this coat, which envelopes the veſſels diſperſed through the viſcera, and every where accompanies them. See *Haller* [a] on the cellular membrane.

If the extravaſated ſerum can be thrown up by coughing, and has not acquired any great degree of acrimony, there is more hope of a cure than in a purulent vomica, of which however many recover. Two medical obſervations confirm this [b]. — A nobleman ſixty years old, four years after a catarrh, which had been neglected, was ſeized with an aſthma, attended with a very troubleſome cough at intervals. He had a difficulty in his ſpeech, and once his legs ſwelled for ſome days. While he was one day lifting up his right arm, he felt as though ſomething burſt in his breaſt, and preſently, with a violent cough, he threw up four pints of a matter like the white of an egg, without taſte or ſmell, and all this within three quarters of an hour. When he had reſted himſelf a little in bed he found himſelf better, and his pulſe was good.—When a happy conſequence was expected from this, the ſame diſcharge returned ten hours afterwards, and he threw up three pints of a like matter in twenty minutes: but he was not relieved by this diſcharge; the oppreſſion on his breaſt increaſed, his ſtrength ſunk, and ſoon after he died ſuffocated. It is probable there were here two vomicæ. A robuſt youth, after a pleuriſy, complained of a ſlight oppreſſion, and a weight near the place where the pain had been. Forty days after, he felt on a ſudden ſomething burſt in his breaſt. A great oppreſſion ſoon followed, with a moſt violent cough. Within an hour after, he threw up four pints of matter like the former,

[a] Primæ Lin. Phyſiolog. p. 15, & ſeq. [b] Targioni Tozzetti prima raccolta di obſervat. mediche, pag. p83, & ſeq.

and

and recovered. Certainly, in this caſe, one ſhould rather have expected an abſceſs. However, whether pus, or extravaſated water, be lodged in the lungs, we ſhould endeavour to draw it out.

APH. MCCXXI.

AND even the aſpera arteria, on its anterior and conſpicuous part, when lymph, from whatſoever cauſe, is collected and ſtagnates therein, often produces a ſpecies of the bronchocele. This diſorder is eaſily known, and is cured, as authors tell us, by puncture, and by the uſe of diſcutients and revellents.

Tumours frequently appear in the fore part of the trachæa, and thoſe too of a conſiderable ſize, which, as they are thought to ariſe from violent ſtraining, loud crying, or the ſtruggles of a woman in labour, have been reckoned a kind of hernia, or rupture, and diſtinguiſhed by the name of bronchocele. The thyroid gland is imagined to be the ſeat of theſe tumours. Mr. *Lalouette*[a] has taken great pains in examining the ſtructure and uſe of this gland, both in the human body and in brutes. He found the internal ſtructure to conſiſt of innumerable, round, tranſparent corpuſcles; from which there flowed, upon inciſion, a yellow humour of a very viſcid nature, but yet ſoon diſappeared. After making a ſlight wound with the point of a lancet, he blew in air through a pipe, on which the thyroid gland ſwelled conſiderably, and he plainly ſaw theſe ſmall round bodies riſe and ſwell; but when he blew into the arteries or veins, they did not ſwell. A child-bearing woman holding in her breath ſtrongly in violent labour pains, had the left ſide of the thyroid gland

[a] Mem. de mathem. & phyſique, tom. i. pag. 160.

conſiderably ſwelled, which ſwelling, upon opening the body, was found to contain air only, and a few drops of a thin yellow fluid. Whence it is probable, that the air retained in the aſpera arteria found a way into the ſubſtance of this gland, by the woman's violent efforts in labour.

Such watery tumours are eaſily known, and if they are not very large, may be diſcuſſed by friction, by fomenting with camphorated ſpirits, and by hydragogue purges properly adminiſtered.—Decoctions of briony, with wine and a little ſal ammoniac, or the root alone bruiſed to a pulp, has often been of ſervice. If theſe tumours are large, and do not yield to theſe remedies, they may be ſafely opened, when, for the moſt part, they diſcharge a pellucid, viſcid liquor, reſembling the white of an egg.

APH MCCXXII.

THE follicle of any gland may be the ſeat of the like diſorder, and may be cured by the ſame methods.

There is, perhaps, ſcarce any part of the body, where tumours of this kind may not ariſe, when either the follicle of a gland, or the cells of the membrana adipoſa are diſtended with watery ſerum. There is not a cavity in the body, great or ſmall, that does not exhale and abſorb ſome humour; if, therefore, from any cauſe, this exhalation and abſorption is obſtructed, ſuch a watery ſwelling may be produced.

APH.

APH. MCCXXIII.

A Very remarkable kind of dropſy alſo frequently ariſes in the ovaria of women; but chiefly in thoſe who are barren, and advanced in years. It is with great difficulty known, but from diſſection; is never cured, and often turns to an aſcites.

The ovaria are ſituated on each ſide of the bottom of the uterus, and frequently ſwell into atheromatous, ſteatomatous and dropſical tumours, in which ſtrange concretions have been found, as hairs, ſtones, teeth, bones, and large hydatides, incloſed in peculiar membranes, and thoſe ſometimes of a prodigious ſize. But although this diſeaſe moſt frequently attacks barren and elderly women; yet it is certain, that fruitful women have been ſubject to it, even in the prime of life. Dr. *Douglas*[a] found the left ovarium in a woman twenty-ſeven years old, changed into a large hydatid, which filled the whole cavity of the abdomen, and contained above ſeventy pints of a viſcid dark-coloured humour, almoſt of the conſiſtence of a ſyrup. In the ſack itſelf, which incloſed the humour, he found many ſmall bladders of different ſizes, diſtinct from each other, reſembling a mucilage of quince-ſeeds, and coagulating on the fire like the white of an egg. This tumour grew to this prodigious ſize in the ſpace of three years, and aroſe from a violent blow on the left ſide of the abdomen, not long after the birth of her firſt child. She felt great pain from the blow, which, however, went off in three days. Two months after, ſhe felt ſome ſlight pains in the hypogaſtric region, on the left ſide, which began alſo to ſwell. The pains in-

[a] Philoſophical Tranſact. No. 308.

creaſed

creaſed more and more, till ſhe became pregnant, during which ſhe perceived no unuſual uneaſineſs, only the abdomen was more ſwelled than in common, and ſcarcely ſubſided at all after delivery. In a year after ſhe became pregnant again; and about the middle of that time, her legs began ſuddenly to ſwell, and if they were rubbed, diſcharged a conſiderable quantity of water, and alſo from the ſkin of the abdomen, eſpecially if the ſmall pimples on the ſkin happened to be ſcratched. We read of a virgin who was ſeized with this diſeaſe at thirty, and lived to be eighty-eight years old. Upon diſſecting the body, the ſwelling was found to fill all the abdomen, except the pelvis [a].

A dropſy of the ovarium may be eaſily known in its beginning, from its ſituation in one or other ſide of the hypogaſtric region, and from the circumſcribed limit of the tumour. An obtuſe pain, and a kind of weight is alſo perceived in the part affected. Women bear this complaint a long time without remarkable injury to their health. They conceive, bear children, and the abdominal viſcera perform all their functions, as they are not ſoaked in water, as in an aſcites. The urine is diſcharged pretty freely, and in ſufficient quantity, which is ſeldom the caſe in an aſcites. To theſe ſymptoms, *Targioni Tozzette*, a celebrated phyſician, adds a ſwelling of the leg on the ſame ſide with the tumour, and a frequent oozing of water through the pores of the ſkin, which he reckons a pathognomonic ſign.

Nevertheleſs the true ſeat of the dropſy may ſtill be doubtful, as it may be likewiſe in the fallopian tubes. *Bonetus* [b] relates a caſe, in which theſe tubes were amazingly ſwelled, and yet no water was found in the abdomen, although it was greatly diſtended, but one hundred and twenty four pints of a limpid water were contained in the right fallopian tube. The ovarium was of a middling ſize only, and half

[a] Memoir. de l'Academ. de Chirurg. tom. ii. pag. 458.
[b] Sepulchret. Anatom. tom. ii, pag. 491.

of

of it putrified. No one could certainly diſtinguiſh at firſt, whether this tumour was in the ovarium or in the fallopian tube. However the method of cure is much the ſame, in which ſoever of theſe parts the ſeat of the dropſy be.

But a dropſy of the ovarium may, by burſting its incloſing membranes, let out the contained water into the cavity of the abdomen, and thus produce an aſcites; but this has rarely happened, for prodigious watery tumours have been found in the ovaria unbroken, on diſſection. The cure is difficult, as the diſorder lies concealed a long time before it can be properly diſtinguiſhed; and is ſcarce ever certainly known, till the ſwelling is grown to a conſiderable ſize. Add to this, that ſometimes a ſcirrhus attends this complaint, which ſtill adds to the difficulty of the cure. Sometimes a gelatinous ſubſtance is contained in this kind of tumour, which cannot be diſcharged through the trochar. In this caſe it is neceſſary to dilate the wound, in order to procure a free paſſage to this thick fluid.—But putrefaction ſoon follows the admiſſion of air, ſo that part of the contained humour eſcaping into the abdomen, ſoon corrupts, and occaſions death.

Is, therefore, a dropſy of the ovaria abſolutely incurable? A caſe related by Dr. *Houſtoun*[a] ſhews that it is not; eſpecially when the diſeaſe has not got to a great height, and when the tumour does not adhere to the neighbouring parts. It is however certain, that the paracenteſis is as ſafe in a dropſy of the ovarium, as in an aſcites; for by this means, life may be prolonged for many years, and the patient greatly relieved, though a perfect recovery ſhould not be obtained. Profeſſor *Morand* aſſerts, that he frequently performed this operation upon a lady of quality, who ſuffered ſo little from it, that ſhe frequently went into the country the day after the operation, although in general eighteen pints of

[a] Philoſophical Tranſact. No. 381.

water

water were drawn off; nor did ſhe die of this, but of ſome other diſeaſe.

APH MCCXXIV.

AND even in the cavity of the uterus, when its internal orifice is cloſed up, there is often ſo great a quantity of water collected, that the whole abdomen ſeems to ſwell, as in an aſcites. This diſeaſe is alſo difficult to be diſtinguiſhed, on account of the ſymptoms reſembling thoſe of pregnancy. It is cured by relaxing the orifice of the uterus by fomentations, ſteams, and by the uſe of uterine medicines.

As the uterus is hollow, the extreme orifices of its arteries exhale a ſubtile lymph, which is either diſcharged by the os uteri, or, if that be cloſed up, it will be reſorpt by the veins, which are here very numerous, and ſufficiently open. Hence it is plain that the os uteri muſt be cloſed, or the ſides of the vagina grow together to form a dropſy of the womb; hence alſo we ought to conſider this diſeaſe as affecting pregnant women, or thoſe who are not. *Hildanus*[a] obſerved an hydrops uteri in his wife while ſhe was pregnant. Her body ſwelled to a monſtrous ſize, and every body thought ſhe would bring forth ſeveral children. Six weeks before delivery, her legs and feet ſwelled, as is common in dropſical caſes. She ſuffered extreme pain for a long time, at laſt, ſhe was ſeized with labour pains, which ſuddenly increaſing, the os uteri opened, and eighteen pints of clear water, without the leaſt tincture of blood, flowed out. After ſhe had reſted half an hour, and

[a] Obſerv. Cent. ii. pag. 128.

been

been ſtrengthened by cordials, the waters, which properly belong to the membranes incloſing the fœtus, came away, to the quantity of nine pints.—It ſeems probable, that the firſt eighteen pints of clear water were preternaturally collected, and not incloſed in the membranes which involve the fœtus, as the waters contained in them are ſeldom ſo tranſparent. *Hippocrates*[a] knew this diſeaſe, and ſays, that the woman will recover if ſhe goes out her time, "for "that the water collected before will be carried off "with the childbed diſcharge."

But ſometimes a dropſy of the womb follows after a miſcarriage, eſpecially if the placenta is left behind, which has often been converted into a maſs of hydatides. *Ruyſch*[b] and *Tulpius*[c] give ſeveral caſes of this kind; and *Hippocrates*[d] ſeems to have known this cauſe of a dropſy of the womb. But obſervation likewiſe ſhews, that water is collected in the womb, when it is not pregnant, which often deceives the moſt ſkilful practitioners, with a falſe ſhew of pregnancy. Sometimes alſo water is collected in the womb, diſcharged at ſtated times, and collected afreſh. *Fernelius*[e] relates a caſe of this kind.

Sometimes women who have a dropſy of the womb are firmly perſuaded that they are with child, and think they perceive the motion of the fœtus. But this ſenſation may ariſe from flatus wandering through the inteſtines, and ſucceſſively diſtending different parts of the abdomen. *Mauriceau*[f] tells us, a barren woman was perſuaded ſhe was pregnant; at the end of ten months, a quantity of water, together with flatus, iſſued from the womb, and the ſwelling of the abdomen ſubſided; for wind may be collected in the cavity of the womb, as well as water, which will produce the appearance of a tympany, if

[a] De Nat. Mulieb. [b] Obſ. Anat. Chirurg. pag. 25. [c] Obſ. Med. pag. 238. [d] Ibid. [e] Pathol. lib. vii. part 2. pag. 196. [f] Traité des malad. des femmes groſſes, tom. i. pag. 177.

the

the os uteri be ſhut up. *Hippocrates*, in the book already quoted, mentions an inflation of the womb, and that "when it is diſtended with air, women "think that they have conceived." But whether water or wind are contained in the womb, the cure is the ſame, which conſiſts in opening the os uteri by baths, fomentations, and ſteams, &c. compoſed of the moſt emollient herbs, ſuch as were recommended at Aph. 35. No. 3. To theſe ſhould be added uterine remedies, as myrrh, ſagapenum, opoponax, aſſafætida, galbanum, &c. out of which, thoſe are to be choſen which agree beſt with the age and conſtitution of the patient.

APH. MCCXXV.

WHENEVER the ſame lymph ſtagnates, or is extravaſated through the whole habit of the ſubcutaneous fat, that kind of dropſy is formed which is called ἀνασαρκα, ὑποσαρκα, and λευκοφλεγματία: which alſo extends itſelf about the abdomen and ſcrotum.

The adipoſe membrane is diſperſed all over the body; it inveſts all the muſcles, tendons, &c. and alſo their fibres, and even conſtitutes in part the very ſubſtance of the veſſels and viſcera. *Kaau*[a] has very accurately deſcribed this membrane, and at the ſame time demonſtrated, that a fat oil is ſecreted from the blood into the cells of this membrane, not by pinguiferous veſſels, but by very minute ſanguiferous arteries, which is again abſorbed by the veins, and returned into the blood. If more fat is ſecreted than can be reſorpt by the veins, the body is overcharged with fat.—If it is abſorbed by violent motion, by heat, or by a fever, a ſudden emaciation will follow,

[a] Perſperat. Hippocrat. dicta. pag. 326, & ſeq.

as

as often happens in acute diſeaſes. Therefore, when water abounds in the body, or is not intimately combined with the thicker particles of the blood, it will eaſily get into the cellular membrane, and occaſion a general ſwelling of the whole habit. Dr. *Hales*[a] produced an artificial dropſy by injecting warm water into the arteries of animals; and *Kaau*[b] tells us, that water injected into the veins, ſwells the cellular membrane ſooner than when it is done by the arteries. For this reaſon, a dropſy of this membrane is called *anaſarca*, and *aqua intercus*, becauſe it raiſes up the ſkin from the ſubjacent parts.

Watery ſerum collected in the cellular membrane may be diffuſed over the whole habit, and particular parts may ſwell from the ſame cauſe. Frequently only the feet, legs, and thighs ſwell in an anaſarca, and indeed this diſeaſe generally begins in the lower parts, as the water collected in the cellular membrane tends downwards by its own weight, and ſwells the feet towards the evening.—It is farther to be obſerved, that an anaſarca may have its ſeat both about the abdomen, and about the ſcrotum, becauſe ſometimes the cellular membrane of theſe parts, which is eaſily diſtended, may ſwell in ſuch a manner, as to put on the appearance of an aſcitis, or of a dropſy of the teſticles.

This diſeaſe is uſually called alſo λευκοφλεγματία, but perhaps not ſo properly. For in a leucophlegmatia a mucous viſcidity rather prevails, which being diffuſed over the whole habit of the body is more equally diſperſed every where. In an anaſarca there is a watery thinneſs of the fluids, and the ſwelling appears firſt in the lower parts of the body, and then aſcends gradually.

Theſe two diſeaſes ought to be well diſtinguiſhed, as they frequently require a different method of cure.

[a] Hæmaſtatic. pag. 114. [b] Perſperat. dicta Hypocrat. pag. 335.

A leu-

A leucophlegmatic girl may be cured by roborants only, without any evacuations, which is rarely the caſe in an anaſarcous dropſy. They are chiefly diſtinguiſhed by the following ſigns: in the former, the whole habit ſeems ſoft, doughy, and cold; in the latter, the feet ſwell firſt, and are more affected than other parts of the body. Beſides, if the ſwelled parts be preſſed with the fingers, they pit, and riſe again gradually when the preſſure is removed; but this cannot ſo eaſily happen in a leucophlegmatia, as the collected humour is more viſcid, and cannot ſo eaſily paſs into the cells of the membrana adipoſa, which communicate with each other.

An anaſarca may be productive of many and various evils, according to the parts it affects. I have ſeen the eye-lids ſo ſwelled that they could not be ſeparated, and when it has attacked the ſcrotum, the penis ſo greatly inflated, and the præputium ſo ſtrangely twiſted as to occaſion a difficulty, and ſometimes a total ſuppreſſion of urine. However, an anaſarca, cæteris paribus, is more eaſily cured, unleſs it ſeizes the internal parts, than other kinds of dropſies, as numerous large veins run through the cellular membrane, which may reſorb the collected ſerum: and the ſtagnant fluids may be put in motion by frictions, and thus the abſorption of it promoted.

APH. MCCXXVI.

WHEN this water is collected either in the duplicature of the peritonæum, in the cavity of the abdomen, between the peritonæum and the abdominal viſcera, in the dilated cavities of the glands; or in the veſſels contained in the abdomen, the diſeaſe is called an *aſcites*; but if the abdomen is turgid by a rarefied

fied vapour ariſing either from water, pus, ichor, or air incloſed and putrified there, it is called a *tympany*.

The collected water may be contained either in the cavity of the abdomen, or lodged in dilated hollow membranes, or between the duplicature of the peritonæum. But it is of no great moment, with regard to the cure, whether the water be lodged between the duplicature of the peritonæum, or between the peritonæum and the aponeuroſis. It will indeed always be of uſe, to know whether the water be lodged in the abdomen or not; and how this is to be known, we ſhall preſently explain.

Dr. *Mead* held the peritonæum to be a double membrane, and mentions three ſpecies of an aſcites; the firſt, when water is lodged in the cavity of the abdomen; the ſecond, when water is extravaſated between the aponeuroſis of the tranſverſe muſcles and the peritonæum; the third, when the fluid, falling between the coats of the peritonæum, forms, by diſtending them, a receptacle for itſelf; and gives us a very ſingular caſe of a woman, who had all theſe three kinds of dropſies. It ſeems poſſible, that a dropſy may have its ſeat between the duplicature of the peritonæum, although probably this happens but ſeldom; nor is it eaſy to diſtinguiſh, whether the water be lodged between the peritonæum and the aponeuroſis of the tranſverſe muſcles, or in the duplicature of the peritonæum, as the membranes are much injured by the diſeaſe.

Liſtre[a] has accurately enumerated the diagnoſtic ſigns of a dropſy of the peritonæum, which are,

1. If the beginning is gradual, and the increaſe ſlow: this is principally remarkable in the firſt ſtages.

[a] Academ. des Sciences l'An. 1707. Mem. pag. 667.

2. If the belly does not ſwell equally all over, as when the water is lodged in the cavity of the abdomen; but is circumſcribed, eſpecially towards the fore-part, and the form of it not much altered by different poſitions of the body. Thus it is diſtinguiſhed from a dropſy in the cavity of the abdomen, for, unleſs the abdomen be very much ſtretched, the ſwelling changes place, as the patient moves from one ſide to the other. Thus alſo it may be diſtinguiſhed from a beginning tumour of the ovarium, which occupies the lower lateral region of the abdomen.

3. If no fluctuation is perceived in ſome part of the abdomen out of the limits of the tumour.

4. If the lower extremities do not ſwell, or, however, but little, and that very ſlowly.

5. If the patient bears the diſorder long, without any remarkable injury to the functions of the body, and ſcarce ſuffers any other inconvenience than ariſes from the ſize and weight of the tumour gradually increaſed.

It is certain, a woman whoſe belly was amazingly ſwelled, lived upwards of thirty years, healthy in other reſpects, and without any ſwelling in the legs, in whoſe body a vaſt quantity of water was found in the duplicature of the peritonæum [a].—But we read of a ſtill more ſurprizing caſe of a woman who bore this diſeaſe forty-four years, and at laſt died in the eighty-ſecond year of her age, the ſwelling remaining in the ſame ſtate all the time [b].—For when water is lodged out of the cavity of the abdomen, the viſcera are not injured by it; the patient therefore can ſupport the diſeaſe longer, and enjoy tolerable health in other reſpects. From this circumſtance, we may likewiſe deduce diagnoſtics for diſtinguiſhing the diſeaſe.—There are great hopes of curing this kind of dropſy,

[a] Philoſ. Tranſact. No. 348. [b] Medical Obſerv. and Inquiries, Vol. i. pag. 7.

as

as the dropſical bag may be entirely emptied by tapping; and if, by the admiſſion of air, a putrefaction ſhould ariſe in the emptied bag, it may be corrected by anti-ſeptic and detergent injections.

We are now to treat of an aſcites, which is of two kinds. For in the one, the water fluctuates freely, and waſhes all the abdominal viſcera; in the other, it is collected in the dilated cavities of the glands, or in the veſſels, and is called an *encyſted* dropſy.

When the abdomen begins to fill with water, the ſwelling is firſt perceived in the ilia or flanks, and as the belly enlarges, there will be a greater preſſure upon the lower parts, by which the iliac veins are compreſſed; and hence, in an aſcites, the legs and thighs often ſwell: on the contrary, when water is collected between the muſcles of the abdomen and the peritonæum, or in its duplicature, the iliac veins are not compreſſed; and therefore, the lower extremities are not at all, or but very little ſwelled; and then not until the ſwelling in the abdomen is ſo much increaſed as to compreſs the viſcera.

The fluctuation of the water, and its falling towards the ſide on which the patient lies, are eaſily perceived, when the cavity of the abdomen is not quite filled; for when one ſhakes a bottle quite full of liquor, no ſound or fluctuation is perceived. But when the belly is full, the moſt ſkilful phyſicians have been deceived. *Du Verney* the younger, though well acquainted with the methods of examining dropſical patients, candidly confeſſes, that he has ſometimes been miſtaken, having imagined he could perceive a fluctuation, when afterwards he found no water; but that the inteſtines were full of wind, and a gelatinous matter. *Sydenham* obſerves, that preternatural fleſhy excreſcences have been miſtaken for dropſies; and ſo have flatulences, as will appear, when we treat of a tympany.

But if ſo much ſkill is required to determine, whether the ſwelling of the abdomen ariſes from water collected in the cavity, much more is required to determine about the nature and qualities of the fluid contained. *Vernage* ſaw, to his great ſurprize, on piercing the abdomen of a dropſical maiden, that no water iſſued out, but a fluid in colour and conſiſtence reſembling milk, and even taſted like milk, except that it was a little ſalter. It frothed like milk, when let fall from any height, and ſwelled like milk, when ſet over the fire; but it was much lighter, and did not coagulate with acids, but only with ſalt of tartar.

Sometimes the water drawn by tapping is bloody, green, brown, &c. Nay, on repeated tapping, a different fluid is let out at each time.

But the water in an aſcites is frequently contained in greater or leſſer membranous bags, and then it is called an *encyſted* dropſy.—We can eaſily conceive that membranous cavities may be filled with lymph, and gradually diſtended, if the excretory duct, by any cauſe, becomes impervious. We frequently ſee ſuch tumours in the external parts of the body; for inſtance, in the borders of the eyelids, and theſe tumours are uſually called hydatids: it is likewiſe certain, that the ſame may ariſe in the cellular membrane. I have ſeen ſuch ſmall hydatids, or watery bladders, in the white of the eye, on the edge of the cornea and ſclerotica, &c. which being punctured with the point of a lancet, preſently ſubſided, without any ill conſequence.

The ancient phyſicians were acquainted with this ſpecies of the dropſy. *Aretæus*[a] has deſcribed it, but ingenuouſly confeſſes that he knew nothing certain concerning the origin of theſe hydatids. *Ætius* alſo deſcribes them in much the ſame manner, but ſays, that they may be known "by an unequal fluctuation, not perceivable all over the belly, but in

[a] Lib. ii. pag. 51.

"ſome

"ſome particular place." Although ſome of the moderns place the origin of hydatids in the cavities of glands preternaturally dilated, or in the cellular membrane, yet others have thought the lymphatics to be the moſt likely ſeat. *Nuch*[a], who carefully examined the lymphatics was of this opinion, and *Morand* very ingeniouſly illuſtrates and confirms it. Hydatids moſt commonly are lodged, at their firſt formation, under the external coats of the viſcera; but here likewiſe a vaſt number of lymphatics are found. Hydatids contain a lymph ſimilar to that of the lymphatics: the lymphatic veſſels through their whole length appear knotty, while their cavity is every where diſtinguiſhed by two oppoſite valves, which are ſo conſtructed, as to admit the lymph flowing from the narrower to the broader part, but obſtructs its return. It is alſo to be remarked, that the lymphatics are moſt contracted, at that part where a valve is placed, and that they are concave towards the wider part, and convex on the other. If now, from any cauſe, theſe tender veſſels are compreſſed, or obſtructed, the intermediate ſpaces will ſwell, the concave ſide of the valves will be diſtended by the incumbent fluid; and the double valves lying cloſe upon each other, being dilated by the preſſure and the yielding nature of the lymph, may unite and adhere together; and thus all that part of the lymphatic veſſels, which lies between the two valves, will be diſtended into an hydatid.—That hydatids may be formed from a fault in the lymphatics does not ſeem altogether incredible, although it is not without its difficulties, which perhaps farther obſervations, may clear up. *Bianchi* oppoſes the origin of hydatids, and rather thinks that they ariſe from a diſtention and ſwelling of the membrane which ſurrounds the viſcera, by ſerum extravaſated under it. But he aſſerts that hydatids may be diſtinguiſhed

[a] Adenograph. pag. 88.

from other watery tumours by their extreme tranſparency.

It will always, however, be neceſſary to know whether the ſwelling of the abdomen be cauſed by water floating in its cavity, or by water contained in a cyſt. *Du Verney* has collected the following ſigns. 1. If the ſwelling has increaſed ſlowly, ſo that two years or more have paſſed before the abdomen grew to a great ſize. 2. If in the beginning of the diſeaſe, the patient perceived a round ſwelling, gradually increaſing, without giving much uneaſineſs. 3. If the feet, legs, and thighs ſwell very late, and the belly does not change its figure, when the patient alters his poſture, as it does when water floats at large in the abdomen, then there is great reaſon to ſuſpect an encyſted dropſy. It is alſo to be remarked, that many of theſe ſigns are nearly the ſame with thoſe which diſtinguiſh a dropſy of the peritonæum.

However, great circumſpection is neceſſary in forming the diagnoſtic, if the phyſician has not attended from the beginning of the diſeaſe. *De Haen*[a] relates the caſe of a young man, who had all thoſe ſymptoms which attend an encyſted dropſy, and yet the enormous ſize of the abdomen was occaſioned from a ſwelling of the liver and ſpleen. What a ſhameful miſtake would it have been, to adviſe tapping in this caſe?

Beſides it may happen, that a dropſical cyſt overdiſtended by the water may burſt, and pour out its contents into the cavity of the abdomen. Nor is this all, for water has been found in the cavity of the abdomen, with an encyſted dropſy at the ſame time. An inſtance of this kind is related in the Memoirs of the Academy of Sciences for the year 1703.

But the abdomen has ſometimes been greatly ſwelled, though no water has been found in its cavity, or in the duplicature of the peritonæum, or

[a] Nat. Medend. Part. iv. pag. 99.

between

between that and the abdominal muſcles; this kind of ſwelling is called a *tympany* (from the word tympanum) becauſe the turgid belly, ſtruck by the hand, ſounds like a drum. This diſeaſe is alſo called *a dry dropſy*, and is ſuppoſed to ariſe from a rarefied vapour.

The ancients were of opinion, that a tympany was not an original, but a ſymptomatic diſeaſe, and always attended an aſcites or anaſarca. *Aretæus*[a] calls it "a moiſt ſuffuſion which fluctuates in the flanks," and is poſitive that it would produce an aſcites. Many eminent phyſicians have been of the ſame opinion; but although a tympany may ſometimes accompany or follow a dropſy; yet it will appear, from what we have to ſay, that a true tympany is a diſtinct diſeaſe. And here again great caution is required to diſtinguiſh a tympany from an aſcites, as the moſt ſkilful phyſicians have ſometimes been deceived in this point.

In a tympany, the abdomen is never diſtended to ſo vaſt a ſize, as in an aſcites, but is flatter and more compreſſed towards the ſides, and more prominent before. There is no evident fluctuation, and on ſtriking the belly, it ſounds like a wet drum, or one that is not ſufficiently braced. *Cambaluſier* thus defines a tympany, "It is a bag-like tumour of the whole "abdomen, hard and reſiſting, but not ſenſibly "heavy; conſtantly prominent upwards and towards "the navel, ſounding when it is ſtruck, and when "preſſed immediately riſing again, generally at-"tended with eructations, borborygmi, and an ob-"ſtinate conſtipation of the bowels ariſing from fla-"tulency." To theſe he adds, a pulſe fuller and harder than in an aſcites, and that the ſkin of the abdomen is white, tenſe and elaſtic. But although all theſe ſigns attend a tympany, yet the principal are the two following, viz. "if the belly when

[a] Lib. ii. pag. 49.

" ſtruck ſounds like a drum, and the patient when " weighed appears light."

It was formerly a received opinion, that a tympany proceeded from air lodged in the cavity of the abdomen; but though this may be ſometimes the caſe; yet diſſections teach, that it happens but ſeldom, and that the ſtomach and inteſtines greatly diſtended by rarefied air, lodged in their cavities, cauſe a tympany. Profeſſor *Littre* performed the operation of the paracenteſis on the bodies of ſeveral perſons who died of this diſeaſe. The abdomen did not ſink, and after drawing out the trochar, a candle was applied to the orifice, but the flame was not moved, although the abdomen was preſſed on all ſides. In a recent tympany he found but very little water in the cavity of the abdomen, and when it was of long continuance, not above three pints; which ſmall quantity was not at all anſwerable to the prodigious diſtenſion of it. But he always found the ſtomach and inteſtines, eſpecially the large ones, diſtended, and the colon and cæcum ſometimes as big as a man's thigh. *Sinopeus* alſo confirms this opinion by his obſervations. And *De Haen*, profeſſor at *Vienna*, after enumerating the various opinions of writers, embraces that of *Littre*, as he had found the colon dilated in ſome places equal in ſize to the arm and thigh of a man, and the ſmall inteſtines and ſtomach twice or thrice as large as naturally.

As the ſeat of a tympany is probably in the ſtomach and inteſtines, and often follows inflammatory diſeaſes of the bowels, ſome aphoriſms in *Hippocrates*, otherwiſe obſcure, become intelligible.—" Thoſe " who are afflicted" ſays that father of phyſic " with " gripings and pains about the navel, and a " pain in the loins, which are not removed by " purges, or any other means, fall into a dry " dropſy [a] "—Now we know the meſentery and the

[a] Aphor. ii. Sect. 4.

meſocolon

meſocolon are connected with the loins, hence it appears why a pain in the loins prognoſticates a dry dropſy, if by purging or other means, the ſuburra in the inteſtines be not evacuated, and the wind expelled before they have altogether loſt their tone. We likewiſe read in the Coan prognoſtics, "that a "pain above the navel, and in the loins, if not re-"moved by medicine, are the forerunners of a dry "dropſy." In this caſe, the ſeat of the diſorder is principally in the colon. In another place he ſays, "that "a dry dropſy cauſes an orthopnæa;" for the abdomen being immoderately diſtended, the cavity of the thorax is ſtraitened.

Profeſſor *Littre* clearly explains the manner in which the ſtomach and inteſtines may be inflated with air, ſo as to produce a tympany.—The œſophagus always admits the air, and conveys it into the ſtomach along with the food: perhaps alſo, when the ſtomach itſelf is empty, and ſuſpended from both its orifices, the upper orifice not being quite cloſed, may give a free paſſage to the air, which will move freely in the cavity of the ſtomach and inteſtines. The air, indeed, is expanded by the internal heat of the body, but as the alimentary tube is muſcular, it reſiſts its dilatation, and preſſes together the contents of its cavity. *Littre* conſidered the rarefied air, and the contractile force of the inteſtines, as two oppoſite powers. In health, this contractile power prevails, if it did not, it is ſcarce conceivable, how ſix pints and more of medicated waters, ſhould be drank, and the whole be abſorbed by the inteſtines, without any part of it diſcharged by ſtools. But if there be too great a quantity of air pent up in the alimentary tube, or if it be too much rarefied, it is expelled by the contractile force of the ſtomach and inteſtines, and ſo paſs upwards by eructations, or downwards by flatus.

If now, from any cauſe, the contractile force of the inteſtines ſhould be ſo weakened, as to yeild to the

the expanding air, a tympany may be produced. For this reaſon, a tympany often follows chronic diſeaſes, when the ſolids are quite debilitated, and likewiſe after frequent returns of the iliac paſſion. Hence alſo we underſtand why, when a tympany comes to its laſt ſtage, no flatus break forth, nor are borborygmi heard; and likewiſe why, if there be hopes of a cure, flatus and borborygmi are good ſigns.

We have a remarkable caſe to this purpoſe in the Medical Eſſays [a]. A girl twenty-two years old, after a tertian ague, which had been improperly treated, and had laſted ſeven months, took ſome doſes of the bark; after which ſhe felt acute pains in the loins and abdomen, which generally began near the right os ilium; thence they moved upwards, and, croſſing the ſtomach, paſſed to the left ſide. They were attended with gripings and borborygmi, the abdomen ſwelled, and ſometimes roſe to a conſiderable bulk, and then, without any evacuation, gradually ſubſided, but not entirely. The following winter ſhe was free from theſe complaints, but they returned in the beginning of the ſpring, and the abdomen was always ſwelled, and ſometimes to ſuch a ſize, as gave occaſion to fear that it would burſt. At laſt, the tumour gradually leſſened, without any evacuation, and then ſomething like balls bunching out in different places was perceived, eſpecially in the ſide. The appetite was good,—there was no thirſt, and the urine was in proportion to the quantity drank. Purges were given, the fæces were evacuated, but ſcarce any flatus, and the ſwelling of the abdomen remained with very little alteration. Various remedies were tried, both internal and external, but to no effect. The belly ſtill continued coſtive, and no flatus were expelled. At laſt ſhe perceived rumblings and borborygmi in the abdomen; ſome blood was diſcharged

[a] Vol. i. pag. 296.

by the anus, (for ſhe was ſubject to the bleeding piles) and at length ſhe broke wind upwards and downwards ſo violently, that none of the ſick in the ſame hoſpital were able to bear it. The abdomen became leſs and ſofter; the exploſion of flatus continued; and although the ſwelling returned from time to time, yet at laſt, by the uſe of corroborating medicines, ſhe got ſo well as to be able to bear hard labour.—This ſurpriſing diſeaſe ſeems to have been a tympany, in which the colon was diſtended through its whole length, and the hard tumours were undoubtedly indurated fæces; for had they been ſcirrhi, ſo eaſy a cure would not have happened. And when the diſtended fibres of the inteſtines had regained their tone, the wind was forcibly expelled, the abdomen ſubſided, and the retained fæces were carried off by purges and clyſters, and thus health was reſtored.

Nor does it ſeem impoſſible, that after death the wind may find a vent through the anus, and the ſwelling in the abdomen ſubſide. *Ballonius*[a] ſaw two caſes of this kind, to his great ſurprize, "in which "the belly ſunk, and appeared as though there ne-"ver had been any ſwelling." This tympany was ſeated in the inteſtines, for if it had been in the cavity of the abdomen, it is ſcarce poſſible to conceive, that the tumour ſhould vaniſh after death without burſting the integuments of the abdomen.

From theſe caſes, we may conclude, that a tympany moſt frequently has its ſeat in the ſtomach and inteſtines, particularly in the larger; yet we cannot deny, that it is ſometimes ſeated in the cavity of the peritonæum, of which the following caſe is a ſtrong proof. A woman in the flower of her age died ſuddenly; as her belly was greatly ſwelled, it was thought ſhe was pregnant. Her parents and her huſband were deſirous to have her body opened, in

[a] Opex. Omn. Vol. i. pag. 176.

order

order to diſcover the cauſe of her death. When *Ruyſch* had punctured into the cavity of the abdomen, a great quantity of air iſſued forth, and with a ſound, and the whole abdomen preſently ſubſided. The uterus was empty, and ſhrunk up, and all the viſcera of the abdomen and thorax, were ſound, except the omentum, which was putrified; nor could *Ruyſch* with all his dexterity diſcover by what way the air could get into the abdomen. But we at this day know, there is a great quantity of fixed air in the ſolids and fluids of the body,—That while it remains in this ſtate, it is not elaſtic; but when its union is diſſolved by heat, fermentation, or putrefaction, it immediately recovers its elaſticity. Now as the omentum was putrefied, the reaſon is plain, why the abdomen was ſo much ſwelled, and why the air from a ſmall puncture burſt forth with a ſound, and with violence. Hence we learn alſo, why a tympany follows the worſt kind of putrid diſeaſes,—why tenſe and inflated hypochondria are fatal,—why putrid bile effuſed into the cavity of the abdomen, produces a tympany; and laſtly, why the bodies of drowned people, after lying ſome time under water, emerge again, and float upon the ſurface.

The inteſtinal tympany is eaſily diſtinguiſhed from one of the abdomen by the following ſigns. If after gripings of the belly and a pain in the loins, the abdomen ſwells,—if there be frequent borborygmi,—and the belly very coſtive, there is reaſon to ſuſpect an inteſtinal tympany. If theſe be wanting, and the tumid abdomen ſwells ſuddenly, there is room to fear an abdominal tympany, and in this caſe, the ſound of the abdomen will be greater when it is ſtruck. This diagnoſis will be more certain, if ſuch cauſes have preceded as give reaſon to ſuſpect a putrefaction and mortification of the bowels.

Hence the reaſon is evident, why a tympany ſometimes attends an aſcites, namely, when the waters contained in the abdomen begin to putrefy, or the viſcera

viſcera to decay by being long ſoaked in the waters. *Du Verney* the younger ſaw an inſtance of this, and gives us the ſigns by which it may be diſtinguiſhed. —As air is lighter than water, it fills the ſuperior part of the abdomen, and when it is handled, there is leſs reſiſtance felt at that part where the water terminates, and when the poſture of the body is changed, the place of the air and water is changed likewiſe.

A caſe of this kind is mentioned by *Combaluſier*, who pronounced a tympany joined with an aſcites in a woman while living, and when ſhe died, it appeared that he had judged right. For when a trochar was thruſt into the abdomen, which was very prominent, the air preſently broke forth, and with ſuch force, as to extinguiſh the flame of a lamp, and the middle part of the tumid abdomen ſubſided immediately.

APH. MCCXXVII.

A Dropſy of the teſticles, is divided into the following ſpecies, 1. A dropſy of the ſcrotum, which is diſcerned by the touch; by the viſible tranſparency of the ſwelling; and by pitting when preſſed with the fingers. 2. A dropſy of the bag, formed from the production of the peritonæum in a true hernia: this kind of dropſy attends a violent aſcites, and is diſtinguiſhed by the ſigns of a preceding aſcites, or a tympany; by diſappearing upon preſſure, when the patient lies upon his back with the upper parts of the body lower than the belly, and by a diſcharge of water from the abdomen; by the ſudden increaſe and decreaſe of the ſwelling without any manifeſt cauſe; by the form of the ſwelling, reſembling a ſauſage from the ſcrotum towards the groin. 3. A dropſy of the

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tunica vaginalis of the teſticles, which ariſes when the humours there ſecreted are not abſorbed by their proper veſſels, but ſtagnate, accumulate, and frequently diſtend the bladder in which they are contained to an enormous ſize; or if it be there collected from a rupture or obſtruction of the veſſels, the inflammation, ſuppuration, and a collection of ichor, often put on the appearance of this kind of dropſy. But it is known by the tumour not being elaſtic, nor yeilding to preſſure; by being hard, and ſlowly produced; by the abſence of thoſe ſymptoms which attend the firſt and ſecond kind of hydrocele; by the round, or at leaſt, oval figure of the ſwelling; by a manifeſt tranſparency, if the ſcrotum be drawn tight round it, the dropſical bag expoſed to the light of a candle may be clearly ſeen. Whether, beſides theſe kinds of the hydrocele, there ever is a like ſwelling between the nervous coat and the ſubſtance of the teſticle itſelf, is not certain from obſervation; but if there be, it can ſcarce be diſtinguiſhed from the laſt-mentioned ſpecies, nor perhaps cured but by extirpation. All theſe diſorders come under the general denomination of ὑδροκηλαι, or hydroceles.

Theſe dropſies are peculiar to the male ſex, but as they take place in different parts, it will be neceſſary to treat of each ſeparately, as a different method of cure is required.

1. The firſt is properly an anaſarca of the ſcrotum, or a collection of water in the cellular membrane of this part.—It appears from anatomy that a very thin cellular membrane lies under the ſkin of the

the ſcrotum, in which are fixed the bulbous roots of the hairs; under this membrane lies a hollow cutaneous muſcle called dartos, the concave part of which is alſo lined with a cellular membrane; ſo that this muſcle, properly ſpeaking, lies between two cellular membranes. But as an anaſarca has its ſeat in the cellular membrane, the diſeaſe may happen in either, as they communicate with each other, and both of them may be diſtended with water in that ſpace which lies between the ſkin and the tunica vaginalis.

Authors have multiplied the ſpecies of the hernia aquoſa; for they have conſidered that water might be lodged, not only between the tunica vaginalis and the teſtes, but alſo between that and the dartos. The obſervations of that excellent ſurgeon Mr. *Sharp*, on this ſubject, deſerve to be read. However, if the collected fluid be either naturally acrid, or becomes ſuch by ſtagnation, it does not ſeem impoſſible that the cells of this membrane may be eroded, and that by this means the collected fluid may no longer remain in ſeparate cells, but be lodged in a larger cavity; yet this cannot eaſily happen while the cells are entire as *Bertrandi* has well obſerved.

2. Hernias of the groin and ſcrotum are never, or very rarely, cauſed by a rupture of the peritonæum, but by an extenſion of it into a hollow proceſs, which contains a part of the inteſtine, or of the omentum. This proceſs will eaſily receive into itſelf the water contained in the abdomen, and alſo the air, contained in its cavity, when the caſe is a tympany. But when the hernia is reduced, and the place ſupported by a truſs, the proceſs of the peritonæum ſtill remains pendulous in the ſcrotum; and if there be water in the cavity of the abdomen, it may readily enough make its way under the truſs, and fill the hernial ſac. Nay, it has ſometimes been obſerved, that although the omentum and the inteſtine were ſtill lodged in the hernial ſac, yet it contained

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alſo a large quantity of water. *Monro* drew out from a hernial ſac of long ſtanding ſix pints of limpid ſerum; after which he could diſtinguiſh by the touch the windings of the inteſtines, and the unequal ſurface of the omentum, which conſtituted the hernia.—But this kind of hydrocele is chiefly known, when a hernia has preceded, and an aſcites is actually preſent; for as Mr. *Sharp* has well obſerved, an aſcites alone will not fill the ſcrotum with water, and he appeals to all practitioners, whether they ever ſaw an hydrocele at the ſame time with an aſcites, unleſs the patient had a rupture before.

It is eaſy to underſtand how this kind of hydrocele having a communication with the cavity of the abdomen, may diſappear upon preſſure;—may be diminiſhed by a ſupine poſition of the body, if the cavity of the abdomen be not intirely filled with water;—may increaſe when the patient is in an erect poſture, and the watery tumour itſelf may reſemble a ſauſage in figure, as the hernial bag when full is is of ſuch a form.

3. This is the third and moſt frequent kind of hydrocele. Mr. *Sharp* reckons this the only one, beſides the anaſarca of the ſcrotum. Here the water is collected in the tunica vaginalis teſtis, which is a continuation of that membrane which inveſts the ſpermatic chord. *Kaau* ſays, that the internal ſurface of the tunica vaginalis, perpetually exhales a ſubtile dew, which, condenſing in dead bodies, produces a conſiderable quantity of moiſture: Mr. *Sharp* obſerves the ſame. If therefore the reſorption of this ſubtile vapour be by any cauſe hindered, the water will be inſenſibly accumulated, and the tunica vaginalis may be diſtended to a prodigious ſize; and the ſame thing may happen from a rupture of the lymphatics.—I once ſaw a man, who, from a ſlip in the ſtreet, was immediately ſeized with an acute pain in the right ſide of the loins, which ſoon after went off; but in a ſhort time an hydrocele was formed

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on the ſame ſide, increaſing ſo faſt, as to require puncture. It ſeems probable that the hydrocele, in this caſe, aroſe from a rupture of the lymphatics.

We ſhould be careful how we diſtinguiſh other tumours of the teſtes from an hydrocele. Inflammatory tumours of theſe parts are known by the heat, pain, redneſs, and fever which attend them.—Purulent and ichorous tumours by inflammation, or other preceding cauſes, and require a diſcharge of of the collected humour, as well as of the water, leſt the diſorder ſhould be increaſed by delay. Sometimes the teſticle ſwells from a bruiſe, or other cauſes, becomes hard, and increaſes to a vaſt ſize.—This is called a ſarcocele, which is eaſily diſtinguiſhed by the touch, from an hydrocele: yet we ſometimes find a ſarcocele complicated with an hydrocele, which, if it grows to a large ſize, hides the ſwelled teſticle, ſo as that it cannot be felt. But then the diſorder is complicated, and the hiſtory of the diſeaſe will ſhew whether the ſwelling preceded the hydrocele, or not.

This diſeaſe is then only known when it manifeſts itſelf by a ſwelling; for the very beginning, when a ſmall quantity of ſerous lymph is collected in the tunica vaginalis, cannot be diſcerned. For this tumour is not elaſtic, nor does it yield to the preſſure of the fingers, and riſe again, as in an anaſarca of the ſcrotum; becauſe the fluid is not lodged in the cellular membrane, but in the tunica vaginalis of the teſtis. This diſtinction will be ſtill more certain, if the ſymptoms of the firſt and ſecond ſpecies of the hydrocele are wanting. As the cavity of the tunica vaginalis is round, it will retain the ſame figure when dilated; but as it becomes narrower towards the upper part, it may, when quite filled, be of an oval form; yet the ſuperior part of it may be ſo diſtended by an increaſed quantity of water, as that the whole may be round. The water contained in this kind of hydrocele, is moſt commonly limpid,

and therefore the whole of the tumour will be tranſparent, and the teſticle eaſily ſeen with the light of a candle; but if the diſeaſe is of long ſtanding, the collected fluid becomes turbid and bloody, and the paracenteſis of the ſcrotum ought then to be performed with greater caution.

Beſides the ſpecies of watery ruptures already mentioned, ſome have thought that a watery fluid might be collected between the ſubſtance of the teſticle, and the albugineous coat, but we have no certain proof of this kind of dropſy, and if it ever happened, it muſt be when the albugineous coat is ſeparated from the ſubſtance of the teſticle itſelf.

APH. MCCXXVIII.

IT has been obſerved, that all theſe diſeaſes ariſe from every cauſe capable, 1. So to confine the ſerous fluid, as that it cannot return into the veins, but ſtagnates in the diſtended veſſels. 2. From every cauſe that can ſo rupture the veſſels themſelves, as to extravaſate the ſerum between the membranes; or, 3. From every cauſe which ſo obſtructs the veſſels that convey the fluids from the cavities, or ſo little moves the fluids already depoſited in them, that they can neither be exhaled, nor reſorbed.

After enumerating the various ſpecies of dropſies, it remains that we now treat of their cauſes; but as they are ſo various and numerous, order requires that they be ranged into ſome more general claſſes, which will be the ſubject of this aphoriſm.

1. We are taught by phyſiology, that all the lymph which returns from any part of the body, paſſes from the lymphatic veſſels into the ſanguiferous veins,

veins, either immediately, or through the cyſterna lumbaris, the ductus thoracicus, and ſo on to the ſubclavian vein. Whatever therefore obſtructs the free paſſage of the lymph into the larger veſſels, will occaſion it to ſtagnate in its own veſſels, and diſtend them, and the ſmalleſt abſorbent veins will not be able to empty themſelves; whence the reſorption of the exhaling ſteam from the cavities will ceaſe, while at the ſame time, the exhalation from the arteries into the cavities of the body continues, and therefore a dropſy will enſue. *Lower* has demonſtrated this by direct experiments made upon living animals. He made an aperture in the thorax of a maſtiff, and bound the aſcending vena cava; then he ſewed up the wound. The animal preſently grew faint, and expired in a few hours. On diſſecting the dog, a great quantity of ſerum was found floating in the abdomen, juſt as if he had long laboured under an aſcites. He tied very tight the jugular veins of another dog; after ſome hours all the parts above the ligature ſwelled ſurpriſingly, and in two days the animal died, as if he had been ſuffocated with an angina. All the muſcles and glands above the ligature were greatly diſtended with a limpid ſerum. Here an aſcites aroſe in a few hours from the venal blood being obſtructed in its motion.

In pregnant women, if the diſtended uterus preſſes the iliac veins, the legs and thighs are affected with a dropſical ſwelling; but as ſoon as this compreſſion of the veins ceaſes after delivery, the ſwelling intirely diſappears in a few days. From theſe and the like inſtances, *Hoffman* and other eminent phyſicians have aſſerted, that the ſlow motion of the blood through the veins, is the cauſe of the exceſſive ſwelling of the body, and of the ſeparation of the ſerum from the blood in a dropſy. Hence the reaſon appears why the legs ſwell firſt, and why tall men are more liable to this diſeaſe than others; for the venal blood has in thoſe a longer way to aſcend againſt the power of

gravity. But *Sauvage* has well remarked, that the fluids in a healthy ſtate have a certain degree of viſcidity, by which they adhere to the ſides of the veſſels, and by this means the force of gravity is leſſened. If now ſuch a cachexy ariſes, as that firm good blood can no longer be produced, this adheſion to the ſides of the veſſels will be diminiſhed, while the power of gravity continues the ſame; therefore, the extremities will eaſily ſwell, the fluids, in this caſe, degenerating into a watery thinneſs.

2. If the free circulation of the venal blood be obſtructed, the lymphatics will be diſtended; if this diſtention be increaſed, they may burſt, and pour out their fluid into the cavities of the body. Many authors indeed have denied this cauſe of a dropſy; and others think, it is very ſeldom, if ever, the cauſe of this diſeaſe. However, if it be conſidered, that the thoracic duct, which is the largeſt lymphatic veſſel, has been broken, there is no room to doubt but that the ſmaller may ſometimes break. Nay, the ingenious author [a] who aſſerts this, relates the caſe of a man, from whoſe thorax a large quantity of a chylous fluid was taken, and in whom the thoracic duct was perforated near the third or fourth vertebra of the thorax. He likewiſe owns, that on tying the thoracic duct in live animals, he had ſometimes found the receptaculum chyli, or ſome of the larger lacteals, burſt.—But diſeaſes may produce the ſame effect with the ligature, as appears from a caſe related by *Morton* [b].

Beſides, if we reflect, that the lymphatics have very thin coats, it will not appear impoſſible that ſuch ſlender veſſels, turgid with their contained fluid, ſhould ſometimes be ruptured, pour out their lymph, and produce a dropſy: for a great quantity of lymph may flow from the wounded lymphatics, as appears from the obſervations of *Ruyſch* [c]: therefore a rup-

[a] Monro, on the dropſy, pag. 22. [b] Phthiſiolog. lib. i. pag. 21. [c] Obſervat. Anat. Chirurg. pag. 40.

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ture of theſe veſſels may be reckoned among the cauſes of a dropſy, although the following cauſe is much more frequent.

3. All the cavities of the body in a healthy man exhale a very ſubtile vapour, which is reſorbed by the veins, before it is condenſed into water. But if the vital powers be languid, this vapour will be propelled with leſs impetus from the arteries, and conſequently with leſs force into the abſorbent veſſels. For this reaſon, weakly conſtitutions are liable to dropſies, which rarely attack robuſt and vigorous people. Whatever therefore weakens the elaſticity of the veſſels, diſpoſes the body to a dropſy. *Hippocrates* obſerved, that when the prevailing conſtitution of the year was moiſt, with ſoutherly winds, many people fell into dropſies; for nothing more weakens the ſolids than a moiſt warm vapour. See Aph. 44.

But when water abounds in the fluids, and is not exhaled from the body by the cutaneous pores, or carried off by the urinary paſſages, the quantity is increaſing continually, and that of the other fluids diminiſhing. Thus in a confirmed dropſy, the abdomen and the lower extremities ſwell prodigiouſly, while the upper parts ſhrink and waſte away; and the veſſels contain but little blood, ſo that their ſides almoſt collapſe.—Hence the reaſon appears, why an increaſe of water alone, in the blood, may diſpoſe the body to a dropſy.

Theſe are the three general cauſes of a dropſy. It now remains that we conſider thoſe morbid changes of the body which uſually precede one or more of theſe, and thus give riſe to a dropſy.

APH. MCCXXIX.

THESE cauſes are chiefly ſuch as follow, namely, an hereditary diſpoſition: too ſudden and copious drinking of cold liquors, which are neither diſcharged by ſtool, urine, vomit, or ſweat, nor by heat and motion excited. Acute diſeaſes, eſpecially fevers of the ardent kind, whether they be attended with intenſe thirſt, or not. A dyſentery from diſeaſes of the ſpleen. Obſtinate obſtructions of the viſcera, ſuch as a ſcirrhus of the liver, ſpleen, pancreas, meſentery, kidneys, uterus, and inteſtines. A jaundice. A violent and obſtinate quartan ague. A lienteria, diarrhæa, and a dyſentery of long ſtanding. The cæliac paſſion. An empyema. A phthiſis. The gout. All profuſe evacuations, eſpecially of arterial blood. Drinking of acrid and fermented liquors. Hard viſcid, and tough aliments. Large and numerous hydatids, pendulous in the cavity of the abdomen, and many like cauſes, as melancholy, the ſcurvy, &c.

An hereditary diſpoſition.] See Aph. 1075. But as perſons of a weak habit of body are moſt liable to this diſeaſe, it will not appear ſtrange, that the offspring of ſuch ſhould become dropſical, and therefore an hereditary diſpoſition may juſtly be enumerated among the cauſes of a dropſy.

Too ſudden and copious, &c.] This is no unfrequent cauſe of the dropſy, eſpecially in camps, when ſoldiers tired and heated with hard labour, greedily drink large draughts of cold liquors, and reſt themſelves preſently afterwards.—Draughts of cold

cold water taken when the body is heated, either by the weather, or by violent exerciſe, have often been the cauſe of ſudden death, or of acute diſeaſes; and if the perſon eſcapes theſe, there is danger that he ſuddenly falls into a dropſy. For, when a large quantity of water is taken into the body, and mixed with the blood, it does not paſs from the extreme arteries into the veins, but eſcapes through thoſe minute arteries which do not admit red blood into the cavities of the body, and ſoon produces an univerſal dropſy, as appear by the experiments of Dr. *Hale*. See experiment xx. in his Hæmaſtatics. This chiefly happens to thoſe who preſently repoſe themſelves after drinking cold water; but if they move about briſkly, the ſtrong and continual action of the muſcles would hinder the water from lodging in the cellular membrane; beſides, as the body grows warm by motion, the water keeps moving on, and is diſcharged both by ſweat and urine. *Aretæus* and *Ætius* expreſsly mention this cauſe of a dropſy.

Acute diſeaſes, &c.] Although acute diſeaſes, eſpecially thoſe of the ardent kind, ſeem to be of a quite oppoſite nature to a dropſy; as they are attended with a burning heat, a dryneſs of the mouth, tongue, noſtrils, &c. ſymptoms very different from thoſe obſerved in a dropſy. Yet it muſt be remarked, that in acute diſeaſes the more fluid parts are diſſipated, and the groſſer ſo ſtrongly united, that they can ſcarcely be attenuated, even by plentiful draughts of water, or even be miſcible with it, but paſs off from the inſpiſſated blood, either by morbid ſweats or urine.

A laſting dyſentery from diſeaſes of the ſpleen.] A dyſentery in the beginning of diſorders of the ſpleen is generally ſalutary; for it ſhews that the morbid matter which obſtructed the ſpleen is reſolved, and paſſes through the ſplenic vein into the liver, and thence into the inteſtinal canal. But a long continued dyſentery is not the effect of morbid matter diſſolved, but rather a ſign of decayed viſcera, and of an acrimonious ſtate of the fluids.

Obſtinate obſtructions of the viſcera, &c.] This is very frequently the cauſe of a dropſy, inſomuch, that few dropſies occur, in which one or more of the viſcera are not found ſcirrhous; except thoſe which ariſe from profuſe diſcharges of blood, or from drinking large quantities of cold water.

A jaundice.] In an obſtinate jaundice the liver often becomes ſcirrhous. Beſides, if the bile remains long in the blood, it ſo diſſolves and thins the red parts of it, that ſcarce any craſſamentum is left; whence an incurable dropſy, after a long-continued jaundice.

A violent and obſtinate quartan ague.] See Aph. 753, where we treated on thoſe morbid alterations produced by intermitting fevers; where we likewiſe remarked from *Sydenham*, that dropſical ſwellings of the legs were not always bad ſymptoms after intermittents, but ſhewed that ſome portion of the febrile matter was depoſited in theſe parts; therefore he did not treat this complaint like a dropſy, but by medicated wines compoſed of bitters, aromatics, and corroborants.

A lienteria, diarrhæa, &c.] Sometimes the watery ſerum collected in the cavities of the body, and abſorbed by the veins, is diſcharged by ſtool. In this caſe, all theſe evacuations are beneficial, as they carry off the morbid matter. But when theſe have preceded, and the body, weakened and rendered cachectic, begins to ſwell, the patient is in a dangerous ſtate.

An empyema, a phthiſis.] For the texture of the fluids being diſſolved by the pus abſorbed into the circulation in the laſt ſtages of theſe diſeaſes, the extremities of the body begin to ſwell, eſpecially if the nocturnal ſweats ceaſe, the ſtrength be ſunk, and the thirſt be great; for then the liquors drank cannot be freely circulated through the body. See Aph. 1206.

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The gout.] Partly becauſe this diſeaſe is the effect of intemperance, which is likewiſe one cauſe of the dropſy, and partly becauſe long fits of the gout confine patients to their beds; hence a deficiency of muſcular motion, which produces a laxity and weakneſs of the fibres. Add to this, that by long lying on the back, the kidneys are hurt ſo, as often to breed the ſtone, by which the ſecretion and excretion of the urine is impeded; and a ſmall quantity of urine made, is not only an effect, but ſometimes the cauſe of a dropſy.

All profuſe evacuations, &c.] For by immoderate evacuations of any kind, a great quantity of good humours are carried off, the crude aliment will not be duly aſſimilated, a cachexy will follow, and a dropſy in conſequence of it. But this diſeaſe is moſt eſpecially to be feared after great evacuations of arterial blood from wounds, abortions, &c. For it is certain that a diminution of the red parts of the blood, whether it be gradual as in cachexies, or ſudden as in wounds, diſpoſes the habit to a dropſy.

Drinking acrid, fermented liquors.] By an immoderate uſe of ſpirituous liquors the abdominal viſcera harden and become ſcirrhous, which cannot be cured by medicine; now obſtinate obſtructions of this kind, are among the cauſes of a dropſy. But intemperate drinkers are liable to dropſies on another account; for while they indulge in generous wine, the body is heated, the blood rarefied, and all the veſſels grow turgid, and by being ſo often overſtretched, loſe their tone.

Hard, viſcid, &c.] See Aph. 25 and 26, and alſo Aph. 1168, of bad diet, as one cauſe of a cachexy.

Large and numerous hydatids.] Of theſe we treated at Aph. 1226.

And many like cauſes.] For all thoſe diſeaſes which greatly ſink the vis vitæ, may be cauſes of a dropſy; and likewiſe thoſe which render the blood ſo viſcid

viſcid, that it can ſcarcely be diluted with watery fluids, nor intimately combined with them; as is evident from the whole hiſtory of melancholy.

APH. MCCXXX.

THE effects therefore and progreſs of the diſeaſe are generally ſuch as follow. The feet ſwell, eſpecially towards the evening; this ſwelling gradually increaſes and ſpreads. Then the abdomen ſwells, and daily grows bigger, which, in a tympany, when ſtruck, will ſound like a drum; in an aſcites, when the water floats freely in the cavity of the abdomen, a fluctuation is perceived, upon moving the body; but in an encyſted dropſy this ſymptom fails. Next follow a dyſpnæa; thirſt; weight; torpor; coſtiveneſs; little urine; a ſlow fever; no ſweats; a leanneſs which increaſes in proportion to the largeneſs of the ſwelling in the affected parts. Then appears an anaſarca of the thighs, ſcrotum, and ſkin of the abdomen; hydatids; an acrimony of the water ſtagnating, and putrefied by being confined in a warm, cloſe place; ulcers; gangrenes; a bleeding at the noſe; umbilical ruptures; a ſphacelus of the viſcera; and, at laſt, the death of the patient.

The feet ſwell] If the diſeaſe ariſes from a watery thinneſs of the blood only, the ſwelling begins firſt about the ankles, becauſe ſhoes compreſs the feet ſo equally, that they cannot eaſily ſwell. But if it ariſes from ſcirrhi of the viſcera, or from ruptured veſſels, the abdomen ſwells before the feet. But every ſwelling of the feet does not indicate a dropſy;

dropſy; for in the beginning of the ſcurvy the legs ſwell alſo; but this ſcorbutic ſwelling does not feel ſoft and doughy, but reſiſts the preſſure of the finger. Sometimes the feet ſwell after acute diſeaſes, the morbific matter being depoſited on theſe parts to the manifeſt relief of the patient.

A dyſpnæa.] If the abdomen be diſtended with water, the free deſcent of the diaphragm in inſpiration will be hindered, whence the dilatation of the thorax becomes difficult, which will be ſtill more when it is filled with water as well as the abdomen. A dyſpnæa is therefore a bad ſign in a dropſy. For this reaſon, a cough is condemned by *Hippocrates*, who pronounces a dropſy incurable when the patient is conſtantly afflicted with a cough.

Thirſt.] In treating of thirſt in fevers, we enumerated the cauſes, as dryneſs, an imperviouſneſs of the fluids, ſaline acrimony, &c. all which concur in a dropſy of long continuance. For watery ſerum collected in the cavities, does not return by the veins, nor is again mixed with the blood. Hence the blood is daily more and more deprived of its moſt fluid parts, and rendered leſs capable of circulating through the veſſels. Hence alſo the ſecretions of the finer juices are diminiſhed, the ſkin becomes dry, and the tongue and mouth are parched. Neither will copious drinking quench the thirſt, becauſe the liquids drank will not readily unite with the too-much exſiccated blood, but ſoon eſcape from the veſſels into the dilated cavities of the body. For now the ſkin no longer perſpires, and the urine is diſcharged in very ſmall quantities. Hence it may truly be ſaid of dropſical people,

Quo plus ſunt potæ, plus ſitiuntur aquæ.

The more they drink, the more they ſtill deſire.

Weight;

Weight; torpor.] Dropſical people are overwhelmed with the maſs of water, their ſtrength is much impaired, and are ſcarce able to move their unwieldy body. If we reflect beſides, that a ſufficient quantity of animal ſpirits cannot be ſecreted from blood ſo vitiated, another reaſon will occur, why the body feels heavy, and why dropſical patients are inactive and indolent. Add to this, that ſometimes water is collected in the ventricles of the brain, and that the blood deprived almoſt of all its lymph, circulates with difficulty through the veſſels of the brain, whence all the animal functions may be diſturbed, and that in various ways.

Coſtiveneſs.] When the abdomen is diſtended by a great quantity of water, the inteſtines are compreſſed, and the fæces accumulated and hardened in the larger inteſtines. Beſides, the chylopoietic are frequently ſcirrhous, and incapable of forming good bile, whoſe office it is to promote the alvine excretions. For this reaſon, dropſical people frequently require a double or triple doſe of cathartics, in order to procure ſtools.

Little urine.] While the watery ſerum is accumulated in the cavities, it is plain, that but little urine can be ſecreted from the blood, already deprived of its watery parts.

A ſlow fever.] Although in the beginning of a dropſy the body is cold and languid, yet a fever frequently attends a dropſy of long ſtanding; partly from a putrefaction of the ſtagnant fluids, and partly from the blood being deprived of its diluting lymph. For as *Aretæus* obſerves, almoſt all dropſical perſons are feveriſh.

No ſweats.] That the fluids may paſs through the extremities of the minute arterial veſſels of the ſkin, it is neceſſary that the ſkin ſhould be ſoft and warm; but in a dropſy the ſwelled legs and thighs are as cold as marble, while the parts not immediately affected, are almoſt dry and withered. There

are

are great hopes of a cure, if dropſical people ſweat, either ſpontaneouſly, or by art, as it is a ſign that the extravaſated ſerum is reabſorbed, and circulates again through the veſſels.

A leanneſs which increaſes, &c.] Unleſs that which is waſted, both in the fluids and ſolids, be reſtored by wholeſome nouriſhment, the body would be conſumed by a true maraſmus.—The very beſt aliment requires the action of all the viſcera and veſſels, as well as a ſufficient quantity of ſound juices; but the blood in a dropſy is depraved, and the viſcera ſo compreſſed, that they cannot perform their functions: hence nutrition becomes defective.

Then appears an anaſarca of, &c.] Theſe diſorders generally follow an aſcites of long duration, when the vena cava aſcendens, and the iliac veins are compreſſed by the water in the cavity of the abdomen.

Hydatids.] Of theſe frequent mention has been made already.

An acrimony of the water, &c.] Our fluids have a tendency to putrefaction; but ſo long as they circulate freely through the veſſels, and the more corruptible particles are excreted from the body, all putrefaction will be prevented.

Ulcers, gangrenes.] When the watery ſerum ſtagnates long in the cellular membrane, it becomes acrid, inflames and corrodes it, and produces ſores that are very difficult to heal. See Aph. 1242.

A bleeding from the noſe.] This is a dangerous ſymptom, as it diminiſhes the quantity of blood, already too ſmall; and is a ſign alſo, that the deſcending branches of the aorta are greatly compreſſed by the dropſical ſwelling. Perhaps, for this reaſon, *Hippocrates* pronounces "ſmall fluxes of blood a fa-" tal ſymptom in chronical diſeaſes."

Umbilical ruptures.] The *linea alba* is pierced about its middle with a round hole, through which paſſes the umbilical chord of the fœtus. As this

place

place is leſs firm than the reſt of the ſurface of the abdomen, umbilical ruptures frequently happen. It is not therefore ſtrange, that when the abdomen is full of water, this part ſhould be over-ſtretched, and thereby occaſion a rupture.

A ſphacelus of the viſcera, &c.] Namely, when the viſcera are macerated in the water, now grown putrid, and diſſolved into a rotten gore. *Hippocraces*[a] has accurately collected the chief ſymptoms which are of conſequence in forming the prognoſis of this diſeaſe.

APH. MCCXXXI.

THE cure of a dropſy therefore requires, 1. To procure a due fluidity and motion to the lymph, whether it be water, or bilious, ichorous, or bloody ſerum. 2. To draw out the water already extravaſated and collected in the cavities. 3. To repair the injury done to the viſcera, whether it be the cauſe, or the effect of the dropſy.

Theſe are the general indications of cure. We ſhall afterwards ſee by what method, and by what remedies, theſe indications are to be anſwered.

APH. MCCXXXII.

THE due degree of fluidity is procured to the lymph, by renewing the impending cauſes, which are, 1. The vital ſtrength urging on the circulation too feebly. 2. The compreſſion, rupture, or obſtruction of the veſſels. 3. The too great viſcidity of the fluid itſelf.

[a] Prædict. lib. ii.

APH.

APH. MCCXXXIII.

THE firſt cauſe is removed by cardiacs, by corroborative, and ſtimulating remedies, which, if the thirſt be not very urgent, are to be choſen from aromatics, ſaline, oleous, and warm drugs, in the form of an electuary, mixture, medicated wine, or in beer, or pills, decoction, ſyrup, and lozenge, which form may be eaſily varied at choice. Aph. 1232. No. 1.

Thoſe cardiacs anſwer this indication, which ſtrengthen the flaccid parts, and accelerate the languid circulation by their ſtimulating power. In our author's *Materia Medica* are enumerated ſuch remedies as have theſe medical properties. We ſhould, however, be cautious in the uſe of cordials, that we do not all at once and too ſuddenly increaſe the velocity of the circulation. For the dropſy advances too faſt, and the abdomen ſwells more and more in an aſcites, while the arteries continue to exhale the watery ſerum, of which the veins reſorb but a little, or none at all. If therefore the motion of the fluids be ſuddenly accelerated, eſpecially when they are too much attenuated, they might all be forced into the dilated cavity of the abdomen, and all the veſſels of the body would ſuddenly collapſe, an event which would be of dangerous conſequence. *Trallian*[a] obſerved this, and ſays, "very heating remedies taken in great quantities, and at one doſe, "rather melt down the whole habit, than evacuate "the ſuperfluous humours."

Beſides, when the ſtagnant fluids are ſuddenly put into motion, a ſudden fulneſs of the veſſels may enſue, and the lungs be ſo oppreſſed, as to endanger

[a] Lib. ix. cap. 3. pag. 518.

ſuffo-

ſuffocation. For this reaſon, phyſicians endeavour to ſet the ſtagnant fluids into motion, not all at once, but gradually, that the extravaſated ſerum abſorbed and mixed with the blood, may be expelled by the cutaneous veſſels, or by an increaſed quantity of urine; for unleſs this end can be obtained, no cure will be effected by increaſing the vital motions.

APH. MCCXXXIV.

IF the thirſt be very intenſe, and the cauſe ariſes from heat; or if the diſeaſe be attended with a burning fever, which often happens, the thirſt requires refreſhing cordials, grateful acids, and gentle aromatics.

Thirſt is ſeldom troubleſome, till the diſeaſe has made ſome progreſs, and is then juſtly reckoned a bad ſymptom. In this caſe, the warm ſtimulants recommended at Aph. 1232, are not to be allowed.—Sometimes dropſies are the conſequence of acute diſeaſes. Such dropſies were accounted very dangerous by *Hippocrates*, as they did not terminate the fever, and were attended with great pain. In theſe circumſtances warm and ſtimulating remedies would be improper; wherefore, in the *Materia Medica*, other kinds of remedies are preſcribed, as cryſtals of tartar, rob of elder, juniper, ſpirit of ſea-ſalt, &c. Aromatics are likewiſe here recommended, but of the milder kind, which the phyſician may proportion to the degree of languor, heat and thirſt, under which the patient labours.

APH.

APH. MCCXXXV.

IN either caſe, (Aph. 1233, 1234.) friction, motion, and heat, are of uſe.

The whole intention of theſe is ſo to increaſe the vital powers, that the ſtagnant lymph may be put into motion, reabſorbed by the veins, and diſcharged by various channels from the body. But frictions are above all efficacious in an anaſarca, wherein the collected water ſtagnates in the adipoſe membrane, as they act more immediately on the extravaſated ſerum. Simple oil of olives has had very ſalutary effects in an aſcites, when rubbed upon the abdomen morning and evening for a month. But friction is not adviſeable, if the ſwelling of the belly be very great, the integuments be thin and tenſe, and the breathing laborious.

Motion.] For by exerciſe the return of the venal blood towards the heart, is accelerated.

Heat.] Phyſicians have always endeavoured to warm the cold bodies of dropſical perſons, in order to move the ſtagnant ſerum, and diſpoſe it to rarefy into a vapour, to be afterwards imbibed by the abſorbent veins. The ancients applied external heat, and that to a very conſiderable degree. *Ætius* expected great benefit from the heat of the ſun, and directed the ſwelled parts to be expoſed to it. He likewiſe adviſes frictions to be uſed either in the ſun, or at the fire, and to cover the patient with ſand heated by the ſun. *Celſus* directs the ſame method of cure.

APH. MCCXXXVI.

TO anſwer the ſecond intention of Aph. 1232, we muſt find out the cauſe which ſtraitens, obſtructs, or ruptures the veſſels; which, if poſſible, is to be removed, Aph. 1229, or often corrected by the uſe of mineral waters.

For inſtance, if a large ſteatomatous tumour in the abdomen compreſſes the adjacent veſſels, who will dare to promiſe a cure, when ſuch tumours in the external parts, can ſcarce ever be removed but by the hand of the ſurgeon?—Mineral waters have ſometimes cured a dropſy when the obſtacles which impede the free circulation of the lymph are removeable by theſe waters. But it is to be remembered, that mineral waters are only of uſe when the *vis vitæ* is ſtrong, ſo as to be capable of circulating theſe waters, and diſcharging them by urine, ſweat, or ſtool; for if they remain in the body, they increaſe the dropſy.

APH. MCCXXXVII.

THE too great viſcidity of the fluids, both in a hot and cold dropſy may be reſolved, 1. By the remedies preſcribed in Aph. 1233, 1234. 2. By alkaline ſalts, both volatile and fixed, but more eſpecially by the latter. 3. By mercurials, antimonials, and venereal remedies, well prepared by the art of chemiſtry, and judiciouſly applied by the phyſician.

When the humours are too much diſſolved in a dropſy, thoſe remedies which thin the humours are improper: for if after copious hæmorrhages, and after

after drinking great quantities of water a dropſy ſuddenly ariſes, without the ſigns that attend obſtructed viſcera, or a viſcid cacochymy, attenuants are not indicated, but we ſhould rather endeavour to carry off the watery colluvies, and then reſtore the ſtrength by corroborants.

1. All the remedies mentioned in the comment to Aph. 1233, and 1234, are here of ſervice, as they rouſe the vital powers, which propel the blood through the veſſels. At the ſame time, it was there noted from what claſs they are to be taken in the different kinds of dropſy, that is, in the hot and cold. See what was ſaid of the gluten ſpontaneum at Aph. 75, & ſeq.

2. Alkaline ſalts, both fixed and volatile, are among the number of attenuating and diſſolvent remedies, which we now uſe with greater confidence; as Sir *John Pringle*'s experiments plainly demonſtrate that putrefaction is not promoted by theſe ſalts, as was formerly imagined. But there are ſome plants which naturally contain a volatile alcaline ſalt, like that which chemiſts extract from various bodies. Onions, garlic, muſtard-ſeed, and ſeveral other plants of the acrid antiſcorbutic kind, contain plenty of a volatile alcaline ſalt, which is ſcarce perceived ſo long as theſe plants continue whole; but when they are bruiſed, it exhales every way, ſtrikes the ſmelling, and by its irritation draws tears from the eyes. The efficacy of theſe and the like plants penetrates the whole body without any alteration.

3. Various remedies are prepared from mercury, antimony, and copper, which ſtimulate moſt powerfully, and evacuate upwards and downwards. But we here conſider their efficacy in diſſolving viſcidities, and thereby removing thoſe obſtructions in the veſſels and viſcera which gave riſe to the dropſy. For theſe viſcidities being diſſolved, profuſe evacuations ſometimes follow, either by ſweat or urine. But great care is neceſſary in preparing theſe metallic remedies,

medies, and great judgment in adminiſtering them, that they do not at all, or very gently irritate the ſtomach and inteſtines, ſo as to excite, either a vomiting or purging.

APH. MCCXXXVIII.

THE waters collected in the cavities are drawn from thence, 1. By tapping. 2. By making new out-lets for their diſcharge. 3. By urine. 4. By vomiting. 5. By purging. 6. By diſperſion.

APH. MCCXXXIX.

IF the cauſe of an aſcites be recent, and ſuddenly produced from an external cauſe; if the ſtrength be entire, the patient young, the viſcera ſound, and not injured by ſome other diſeaſe; if the water be not putrid, nor yet long confined in the cavities, the paracenteſis is immediately to be performed.

APH. MCCXL.

IN performing this operation, the puncture is to be made three inches below the navel, and at the ſame diſtance from the linea alba, (meaſuring as if the body was ſound) on the ſide oppoſite to the ſeat of the dropſy, by making a puncture with a ſuitable inſtrument. The water is to be let out, in a ſmall quantity, twice a day, taking at leaſt fifteen days to evacuate the whole; giving, in the mean while, the remedies directed at Aph. 1233, to 1238; or, by

by the modern method, the abdomen is to be compreſſed by bandage in proportion to the water diſcharged, leſt the lax and pendulous viſcera and veſſels, ſhould fluctuate, in the emptied abdomen.

The beſt way of fixing the place of puncture, is to meaſure the diſtance between the navel and the edge of the *os ilii*, and perforate with the trocar juſt in the middle between both; but if the abdomen be enormouſly ſwelled, the puncture may be made ſtill lower. By this means ſufficient care is taken, not to hurt the *linea alba*, nor the tendinous ſheath which wraps up the *muſculi recti* of the abdomen. The operation is here directed to be made on the ſide oppoſite to that wherein the dropſy is originally ſeated, becauſe the diſeaſe often ariſes from a ſcirrhus of the liver or ſpleen, which, when ſome part of the water is drawn off, would preſs on the orifice of the pipe, and hinder the diſcharge of the reſt.

It was formerly believed, that the water in the abdomen could not be drawn off all at once without great danger. The ancients were unanimouſly of this opinion: but the modern practice juſtly directs all the waters to be let out at once, ſupporting and bracing up the abdomen at the ſame time.

When the waters are evacuated, one might hope that the little which remains might be abſorbed, and the return of the dropſy prevented by proper diet, and the uſe of corroborating remedies. Certain it is from medical obſervations, that thicker fluids are abſorbed, and afterwards evacuated by urine. Do therefore the bodies of dropſical people attract water from the air? It is manifeſt, that in the warm ſummer air, there is an incredible quantity of water; for fixed alcaline ſalts grow moiſt preſently in this air, and increaſe in weight as ſoon as they are cold: nor is it a ſmall quantity of water which theſe ſalts at-

tract. *Digby* obſerved, that a pound of ſalt of tartar drew from the neighbouring air ſix pints of water, when it was diſſolved *per deliquium*, as the chemiſts ſpeak. Nor is this a property of alcaline ſalts alone; for ſea-ſalt alſo, and ſal ammoniac liquify in the air. If beſides we conſider, that in an aſcites the abdomen ſwells, while the reſt of the body waſtes; it will not appear unreaſonable to believe, that dropſical bodies attract water from the air, as no other cauſe can be aſſigned, why perſons in an aſcites, after the water is drawn off by tapping, fill ſo ſoon again, although they drink very little, and eat the drieſt food; and although the quantity of urine even ſurpaſſes that of the liquor drank.

As to the prognoſtics; they are various, according to the different quality of the waters. That which has the qualities both of lymph and ſerum, is accounted a good ſign, as it ſhews, that the extravaſated fluids are in a healthy ſtate, and that the abdominal viſcera are not injured. If the water is yellowiſh, brackiſh, has ſome lentor, and ſomething of the urinous ſmell, it is a good ſign; becauſe theſe are the qualities of good ſerum. This is confirmed by the obſervations of *Du Verney* the younger, and the more the water departs from theſe qualities, the greater the danger. Fetid water of a deep yellow, or of a red blood colour, as alſo that which is altogether mucilaginous, eſpecially in women, is bad, and denotes an encyſted dropſy, which is ſeldom curable. Thoſe which reſemble pure water, and after evaporation leave little or no ſediment, are very ſuſpicious, and denote a quick return of the dropſy. If the waters deterge the fingers like ſome ſharp leys, and wrinkle the ſkin, it is a ſign of conſiderable acrimony, and therefore, there is reaſon to fear a corruption of the viſcera.

APH.

APH. MCCXLI.

IF the circumſtances enumerated at Aph. 1239, are wanting, or quite contrary, then tapping haſtens the death of the patient.

It is ſeldom that all theſe conditions are preſent; yet tapping may be of ſervice, although ſome of them are wanting. But if the patient is decrepid, and the viſcera corrupted, it is better to abſtain from tapping, leſt the phyſician ſhould ſeem to have deſtroyed him whom he could not ſave: yet as tapping has frequently relieved dropſical perſons, whoſe lives have been deſpaired of by the moſt ſkilful phyſicians, it ought to be performed in doubtful caſes, as it may prolong life.

APH. MCCXLII.

DRAINS made by the actual cautery, by cauſtics, veſicatories, by the lancet, and by ſeatons, in a fleſhy, but depending part, are often very ſerviceable, eſpecially if the nature of the diſeaſe will admit of their being kept open.

All theſe operations take place only, when the water is contained in the cellular membrane; yet ſome obſervations ſeem to ſhew, that by inciſions made in the ſkin of the legs, ſo deep as to penetrate the cellular membrane, an aſcites has been perfectly cured, an incredible quantity of water flowing from the wounds for many days. But as all theſe drains muſt be kept open a long time, that the water may be totally evacuated, there will be ſome danger of a

mortification, which ought to be prevented by all poſſible means.

APH. MCCXLIII.

AS there are many inſtances of dropſies being cured by an evacuation of the waters by urine, we ought to attempt this method, when nature points out the way, by the uſe of urinous, fixed, and compound ſalts; by animal ſalts, vitriolated, and diſſolved metals, which are ſpecific in diſorders of the kidneys.

As water abounding in the blood, is naturally ſecreted by the kidneys, and when ſecreted, expelled from the body, phyſicians have preſcribed diuretics, which have this advantage over other remedies, that they give leſs diſturbance than vomits and purges, and do not weaken the body ſo much. *Sydenham*, who placed the principal hopes of cure in emetics and ſtrong cathartics, had recourſe to diuretics, for weak and hyſterical patients.

There are a great many kinds of diuretics; but fixed alcaline ſalts combined with a vegetable acid, ſo as to produce a ſort of *tartarus regeneratus*, are moſt in uſe. *Sydenham* found theſe very efficacious, nor did he think it of any importance from what ſpecies of vegetables they were taken. But as broom is eaſy to be had, he ordered a pound of the aſhes of this plant to be infuſed in four pints of Rheniſh wine, with a pugil or two of common wormwood. Four ounces of this infuſion were given morning and evening until the ſwelling ſubſided. As broom has a ſaltiſh juice, there is a conſiderable quantity of fixed ſalt left in the aſhes. The aſhes of bean-ſtalks, and of other plants, are alſo greatly extolled by many phyſicians. If an ounce of theſe lixiviated fixed ſalts be infuſed in two pounds of an acid wine, it

makes

makes an excellent diuretic, and poſſeſſes at the ſame time a powerful reſolving, and deobſtruent quality, and is of great uſe both for removing obſtructions of the viſcera, and attenuating the viſcidity of the fluids.

Infuſions of juniper-berries are alſo given, which are famous for their diuretic virtues; but a great quantity of the berries ſhould be uſed. *Du Verney* the younger aſſerts, that wine medicated with juniper-berries, and the leſſer centaury, drank for common drink, was of ſignal ſervice in an aſcites. Four ounces of the rob of juniper-berries diſſolved in a quart of diſtilled juniper-water, with two ounces of the ſpirit, has in it the whole virtues of the juniper-berries. If an ounce or two of this mixture be taken every three hours, it has uſually very good effects. If the patient be very thirſty an ounce of ſp^t. nitr. dulc. may be added to it. The ſeeds of aſh alſo, infuſed in juniper-water, and taken as the former, is of ſervice.

Many other plants have been recommended for their diuretic quality, from which various remedies may be prepared. But the root of the ſea-onion, or ſquills, deſerves the firſt rank. This was a medicine in great eſteem with the ancient phyſicians, for the cure of many obſtinate diſeaſes, eſpecially when infuſed in wine or vinegar. I order half an ounce of the freſh root to be infuſed in two pints of wine, half an ounce of which, I give to a grown perſon in the morning faſting. A ſlight nauſea commonly follows without vomiting, and ſoon after there comes on a plentiful flow of urine. The doſe may be leſſened or increaſed according to the age and ſtrength of the patient, but ſo proportioned as to occaſion a ſlight nauſea only, for if it vomited, no great diſcharge of urine followed. Some have greatly commended the expreſſed juice of millipedes in wine, and I have known it of ſervice, and ſome have ventured to give cantharides.

APH.

APH. MCCXLIV.

VOMITS diſſolve all viſcidities, agitate the obſtructed veſſels, expel the ſtagnant fluids, whence they are of wonderful utility in this diſeaſe.

APH. MCCXLV.

BUT they muſt be ſtrong, frequently repeated, and at ſhort intervals.

This was *Sydenham*'s method, which he boldly purſued, but to bear ſuch violent concuſſions the viſcera ought to be ſound, and the ſtrength tolerably firm,

APH MCCXLVI.

THESE emetics generally prove briſk purges alſo, ſo that they are uſeful two ways, and often alſo a third, namely, by promoting a diſcharge of urine.

APH. MCCXLVII.

THE diſcharge of ſerum by ſtool, is procured by ſtrong purges, taken in various forms, but chiefly in a liquid, and frequently repeated at ſhort intervals,

Phyſicians have placed great confidence in the uſe of purges, as nature often ſolves a recent dropſy by this evacuation, and even one of long ſtanding when the viſcera are ſound. It is certain, that cathartics often complete a cure, if the ſtate of the patient has all

all the conditions enumerated at Aph. 1239. But purges given in a liquid form are preferable to others, becauſe the primæ viæ are frequently entirely dry, ſo that ſolid ſubſtances can ſcarcely be diſſolved, and therefore are leſs active in their operation.

APH. MCCXLVIII.

THE waters are diſſipated by the heat of a fire, or of a ſtove, oven, ſand, the ſun, ſalt, or dung; for by theſe means a diaphoreſis, or ſweat, is excited.

APH. MCCXLIX.

THE waters may likewiſe be diſſipated by a rigid abſtinence from drink, and living upon biſcuit with a little ſalt, and a very ſmall quantity of rich wine.

All phyſicians agree, that dropſical patients ſhould drink ſparingly, and that what they drink ſhould be very ſtrong. But few can ſupport a rigid abſtinence from all drink. For this reaſon, phyſicians have been ſolicitous to find out ſuch things as might allay thirſt, and render abſtinence from drinking ſupportable. *Sydenham* directs the mouth to be waſhed with cold water acidul ted with elixir of vitriol, the chewing of lemons, or keeping tamarinds in the mouth. Others adviſe the holding liquorice-root in the mouth, eating of biſcuits, with a little ſalt. All theſe things by a gentle ſtimulus on the glands, keep the mouth moiſt, and thereby the thirſt leſs tormenting. There have been ſome however who have willingly ſubmitted to this regimen. *Hildanus*, *Liſter*, *Mead*, and many other writers of undoubted credit mention ſeveral patients who had been cured of a dropſy

dropſy by a total abſtinence from drink. A ſmall quantity of rich wine, ſuch as Tokay, the Greek and Spaniſh wines, &c. are adviſed alſo, in order to ſupport the ſtrength, which end it anſwers very well, if the biſcuit be eaten, ſoaked in the wine.

APH. MCCL.

THE third indication of Aph. 1231, is beſt anſwered by chalybeat wines, by ſteel in ſubſtance, and by corroboratives that are gently aſtringent, given in due time, and in a proper quantity; by dry food, generous old wine of an aſtringent quality, and by exerciſe.

A weakneſs of the viſcera and veſſels is not only the cauſe, but alſo an effect of the dropſy. When the water is evacuated, phyſicians have placed great confidence in the uſe of ſteel, either in ſubſtance, or diſſolved in a vegetable acid, with the addition of ſpices, eſpecially combined with ſuch remedies as have a ſtrengthening and aſtringent quality. In the *Materia Medica*, there is a formula of ſuch a medicated wine, which would be ſtill better, if prepared in four pints of Rheniſh wine, inſtead of two: for all theſe remedies act firſt upon the ſtomach, and if they are too ſtrong, prove offenſive to it.

A dry diet of biſcuit, or at leaſt of well-fermented and well-baked bread ſhould be directed, with river-fiſh broiled, and the fleſh of young animals roaſted. The drink ſhould be ſparing and ſtrong. Generous red wine, which is likewiſe aſtringent, is of great ſervice. But that the flaccid inteſtines and ſtomach may be gently ſtimulated, ſome ſeaſoning may be mixed with the food, ſuch as muſtard, horſe-radiſh, pepper, and the like; regard being had to the ſeaſon of the year, and the age and conſtitution of the patient.

To

To corroborate the flaccid parts, bandages are of ſignal uſe, when the water is quite evacuated; which are ſtill more beneficial, if they are impregnated with the aromatic fumes of amber, olibanum, maſtic, ſtorax, and benjamin.

APH. MCCLI.

A Tympany is cured by the ſame remedies and method, if it ariſes from the rarefied ſteams of the extravaſated putrid humours, for when this cauſe is removed, the effect ceaſes. But if it ariſes from air penetrating into the cavities through the putrefied membranes of the inteſtines, and not able to return, but rarefying by the heat of the body, then all the parts ſoon putrefy, and the diſorder from this cauſe is almoſt always incurable. For this reaſon, a dry dropſy is accounted much more incurable than one from water. Puncture often procures relief, but ſeldom a cure. Rollers are uſeful, after the puncture is performed.

At Aph. 1226, we treated of the tympany, or dry dropſy, and its diagnoſtics; we are now to conſider the methods of cure. Phyſicians have applied to the abdomen water made extremely cold, by ice or ſnow; and have alſo ordered it to be drank, with good ſucceſs. Certainly ſuch a ſudden cold contracts the ſolids, and at the ſame time checks the expanſion of the flatulent matter, and is uſeful in both reſpects. In this caſe, the cold water acts as a corroborant, but as ſoon as the abdomen ſubſides, it ſhould be ſupported by rollers, that the ſtomach and inteſtines may not ſo eaſily be dilated again, but be able to reſiſt the rarefied air which moves in their cavities.

The

The periſtaltic motion of the inteſtines is much increaſed by the ſtimulating power of cathartics, and the fæces ſooner excluded; for this reaſon, phyſicians have preſcribed theſe remedies; and ſome have even recommended thoſe of the moſt acrid kind, ſuch as *elaterium*, *orrice*, and *ſoldanella*, together with aromatics and carminatives. But as the whole inteſtinal tube is not always diſtended in a tympany, but only here and there contracted; many have adviſed gentle purges, given in ſmall doſes with carminatives, in order to prevent coſtiveneſs: for the contraction in the obſtructed inteſtines may be increaſed by violent purges, and Dr. *Pringle* has obſerved, that carminatives, without ſome gentle purge, are hurtful. *Hoffman* alſo condemns ſtrong purges, and adviſes thoſe that are gentle, combined with anodynes, and directs that the abdomen ſhould be well rubbed with camphire diſſolved in oil of ſweet almonds.

The rarefaction of the air in the ſtomach and inteſtines is to be prevented as much as poſſible. An accidental practical caſe has demonſtrated that *ſpt. ſulphuris per campanam* is of ſervice in this diſorder. *Francis Oſwald Grembs* had in vain tried to cure a tympany by hydragogue purges. He afterwards directed a fomentation of the patient's urine and *lapis prunellæ*, having ſcarce any hope of a cure. The patient deſired ſomething to allay his thirſt. The phyſician had ſome ſpt. ſulphuris at hand, of which he directed him to take ſome drops in a glaſs of water. This not only allayed the thirſt, but alſo carried off a prodigious quantity of flatus; the belly ſubſided, and the patient was perfectly recovered. But all theſe means take place chiefly when the elaſtic air moves through the cavity of the inteſtines, and cannot eaſily be expelled. For a true emphyſema may happen in the inteſtines, as well as in the other viſcera; but the cure will be very difficult, as the remedies taken, while they paſs through the cavity of the inteſtines, can

can exert but very little of their force on the emphyſema.

Is there room for puncture, when the tympany yields to no remedies? In an abdominal tympany it can be of little ſervice. It may perhaps relieve, but as the putrid fomes ſtill remains, the tympany will return again. The abdomen may indeed be ſupported by rollers; but if elaſtic air be generated again in the cavity of the abdomen, it will occaſion ſuch a difficulty of breathing, as to render the rollers inſupportable. *Combaluſier* juſtly obſerves, that we have no inſtance of the ſucceſs of tapping in a tympany.

APH. MCCLII.

THE firſt kind of hydrocele, mentioned at Aph. 1227, is cured, 1. By curing the anaſarca, whoſe offspring it is. 2. By the remedies preſcribed Aph. 1248. 3. By the moſt powerful diſcutients combined with corroborants, applied to the ſcrotum, and put into greater motion by a conſtant external heat. But the ſecond kind is beſt cured, 1. By a radical cure of the hernia. 2. By removing the material cauſe of the aſcites, and ſtopping the ſource of it, as directed at Aph, 1238 to 1252. 3. By compreſſing the part with a truſs, as in ruptures: but a dropſy once formed here, is ſeldom perfectly cured. The laſt kind is cured, 1. By ſtrong hydragogue purges frequently adminiſtered, and by a drying diet. 2. By the ſtrongeſt diſcutient and corroborant applications. 3. By puncturing the ſcrotum. 4. By cauſtics, and by promoting a ſuppuration.

See *Heiſter*, *Sharp*, and other chyrurgical writers for the cure of hydroceles.

APH. MCCLIII.

FROM all that has been ſaid, it appears, that in the cure of a dropſy, greater difficulty ariſes from the nature of the ſtagnant putrefied water, than from the original cauſes. And hence reaſons may be given, why, when the waters are drawn off, the mortification of the parts which floated in them, is haſtened. Why, upon a ſudden diſcharge of the water from the thorax or abdomen, death, or a violent ſyncope, enſue. Why dropſical patients are ſo very thirſty, and what this thirſt denotes. Why acids are ſo frequently of ſervice in this diſeaſe. Why, when a great quantity of water is diſcharged at once, by powerful evacuants, the ſwelling of the abdomen remains the ſame, or even increaſes, and why it ſubſides upon giving a ſufficient doſe of opium. Why bandages are ſo beneficial, and how far they are ſo.

All theſe corollaries are eaſily underſtood from what has been ſaid already.

Of

Of the GOUT.

APH. MCCLIV.

THE gout is a very painful diſorder, chiefly ſeated in and about the ligaments of the bones of the foot, and their articulations, renewing its attack, moſtly in the ſpring and autumn.

This definition of the gout diſtinguiſhes it from all other diſeaſes; for though it is ſometimes confounded with the *arthritis*, yet it is plain, that they are two diſtinct diſeaſes. For although an inveterate gout may attack ſeveral joints at the ſame time, yet, in the firſt ſtage of this diſorder, it always attacks the feet alone. Beſides, the arthritis uſually begins with a fever, but the gout ſeizes the joints without any *previous ſign or warning*.—The firſt attacks are ſeldom laſting; but if one is ſeized with an unexpected pain in the foot, without any manifeſt cauſe, we may reaſonably ſuſpect that it is the gout; and this more eſpecially, if there are periodical returns in the ſpring and autumn.

APH MCCLV.

THE gout, always uniform, from whatever cauſe produced, when left to its own natural and regular courſe, generally afflicts people of riper years, thirty and upwards; of the male ſex: men of acute and deep underſtanding, who exerciſe it too much, and protract their ſtudies till late in the night. Thoſe who live luxuriouſly, and ſpend the night in

drinking great quantities of ſharp acid white wines, or ſtrong ſpirituous liquids, who have uſed venery too early, and to an exceſs; who are of a large, groſs, and plethoric habit; who uſe acids immoderately; who cool their ſweaty feet too ſuddenly, or ſweat too long in wet ſtockings, or ſhoes; hence thoſe who hunt or ride much in cold weather are in danger of the gout; who have it tranſmitted by inheritance from a parent, who ſometimes eſcapes himſelf, yet appears at length in his offspring; and laſtly, thoſe who have it by contagion.

It will appear hereafter that there is ſomething imperceptibly accumulated in the body, which derived afterwards to the feet, produces the paroxyſms of the gout; for though this diſeaſe may ariſe from very different cauſes, yet the courſe it takes, when produced, is ſimilar in every reſpect, whether handed down by an hereditary taint, or ſprung from errors committed in the general way of living, unleſs it be put out of its natural courſe by improper remedies.

Hippocrates held, that boys were not liable to the gout before the age of puberty. *Æretæus* was of the ſame opinion; and *Sydenham* aſſures us from his own obſervation, that he never had ſeen either children or very young perſons affected with a true gout; but that he had indeed ſome begot of gouty parents, that felt a gentle irritation, as it were, foreboding it, before the age of maturity.

It is certain that men are more ſubject to the gout than women, yet they do not eſcape altogether free, eſpecially when they grow old, or have led a maſculine kind of life.

Studious people are ſubject to the gout, becauſe they uſe little or no exerciſe; by which the digeſtion of

of their aliments is hindered, and indigeſtion may, with good reaſon, be looked upon as the more immediate cauſe of this diſeaſe, as will appear hereafter at Aph. 1265. But all nocturnal ſtudy is particularly hurtful to gouty perſons; and I have ſeen patients, whoſe complaints have been increaſed by peruſing even letters of their friends at too late an hour.

All authors agree that luxurious living is, in particular, a cauſe of the gout.

Sharp acid white wines.] *Helmont* thought that the principal cauſe of gouty pains was owing to an acid acrimony that vitiated the ſynovia, and rendered it thick and grumous. But whether this acid be really the cauſe of pain, is not as yet determined among phyſicians. For both the fluids and ſolids, when examined chymically, exhibit no proof of an acid, but a volatile alkaline ſalt; and even the gouty concretion itſelf diſſolves intirely in acid liquors; or, when diſtilled in a retort, yields a volatile alkaline ſpirit. But an acid acrimony of the fluids may very greatly contribute to produce this diſeaſe, eſpecially when ſour wines are conſtantly drank, and in large quantities. There is, in the Medical Obſervations and Inquiries, a ſurpriſing caſe, which ſeems to favour the exiſtence of an acrimonious acid, and that it is one of thoſe cauſes that produces the gout. Many eminent phyſicians favour this opinion, and *Hoffman* aſſerts, that a tartareous acid may ſometimes, though not always, be the cauſe of this diſorder. See Aph. 1261, where this ſubject is fully treated.

Of a large, groſs, and plethoric habit.] Becauſe this habit of body is peculiar to thoſe who are accuſtomed to high living, and love to drink hard; eſpecially if, at the ſame time, they take but little bodily exerciſe. But *Sydenham* judiciouſly remarks, that a groſs habit is not peculiar to every gouty patient; for ſometimes lean people, though not ſo often indeed, are attacked by this diſorder.

APH. MCCLVI.

THE ſeaſon, age, and other circumſtances which perform the part of cauſes, and then the phænomena, beginning, progreſs, effect, and termination of this diſeaſe, being well comprehended, demonſtrate the medical cauſes thereof.

From different cauſes there is a ſomething generated in our fluids, which in time increaſes, and at length ſhews itſelf about the joints of the lower extremities, if the diſeaſe be regular. But this increaſe or accumulation of the morbific matter is faſter or ſlower, in proportion as the cauſes of the diſeaſe are more or leſs powerful.

APH. MCCLVII.

FOR the repeated paroxyſms of this long lurking diſeaſe, are generally preceded by crudities, eructations, heavineſs, a flatulent torpor, coſtiveneſs, feveriſhneſs; the uſual ſweating of the feet ceaſes, and their veins become varicous, or by a change of the ſeaſon, or of the weather.

Sweating of the feet, &c.] In healthy perſons, the feet frequently ſweat, eſpecially between the toes; and a deficiency of this diſcharge is a ſure preſage of an approaching fit, as *Hoffman* and others have obſerved. — Every cauſe that hinders the free return of the venal blood towards the heart, muſt diſtend the veins, and by this diſtention occaſion varices: for although there are valves in the veins of the lower extremities to leſſen the preſ-

ſure

ſure of the blood on the lower extremity of the veſſel, yet it requires a ſufficient impetus of the blood to raiſe up the valves, which is here deficient, ſo that the motion of the venal blood is retarded, and the veins of courſe ſwell, and become knotty.

Change of the ſeaſon, or, &c.] Though the gout generally attacks people in the ſpring and autumn, when the greateſt changes of the weather happen, yet it does not appear to be intirely limited to theſe ſeaſons; for an unexpected fit may be brought on at any time of the year by the cauſes enumerated in the following aphoriſm.

APH. MCCLVIII.

ALL errors committed in the non-naturals, which produce crudities, haſten and bring on the fit unexpectedly. Hence immoderate venery, ſitting up late at ſtudy; hard drinking; eating aſparagus, fat bacon, and the like; fatigue; paſſions of the mind; a purge only; moiſt, cold, tempeſtuous weather, are all hurtful to gouty people.

Eating aſparagus, &c.] Aſparagus eat in the ſmalleſt quantity gives the urine a rank ſubputrid ſmell, intirely different from the ſmell of the ſame when either raw or boiled, which is particularly remarkable, becauſe garlick, for inſtance, gives the urine a ſmell, but then it is with its own particular flavour. We ſee from this quality of aſparagus of how penetrating a nature it is, and though healthy people may eat any quantity of this vegetable without any harm, yet gouty perſons have found, by experience, that it haſtens the paroxyſm, when eat in a large quantity. Is it by this penetrating quality that

it agitates the morbific matter, and puts it into motion? Fat bacon, and the like, is hurtful, becauſe it can only be digeſted by robuſt people, and thoſe who are conſtantly employed in hard labour. See Aph. 196.

A purge only.] We only conſider purges here as ſuſpected of haſtening the gouty paroxyſm. Many phyſicians are of opinion, that part of the gouty matter may be carried off by purgatives, and the fit rendered much more mild, eſpecially if it be occaſioned from errors in diet. *Hoffman* aſſerts, "that "all pains, in whatever part they be, are rendered "milder by clearing the primæ viæ, before the uſe "of other remedies." And for this purpoſe he principally recommends manna, rhubarb, cream of tartar, and clyſters, as they give leaſt diſturbance to the body. But *Sydenham* ſays, that any cathartic taken either in the fit, or during the intervals, are hurtful, "and even haſten the miſchief which they "were intended to avert." But ſee Aph. 1271.

APH. MCCLIX.

THE place which the gout firſt and regularly attacks, is always the foot, and chiefly thoſe parts of it through which the fluids circulate with the greateſt difficulty; as the perioſteum, the tendons, nerves, membranes and ligaments; which, being at a greater diſtance from the heart, are the moſt compreſſed.

APH. MCCLX.

WHEN the parts enumerated in the above aphoriſm, are at length ſhut up by obſtruction, tumour, or infraction; or when the matter of the diſeaſe is by any cauſe diſperſed into other parts of the body, it excites the ſame ſymptoms in theſe parts, as it did in the former where it firſt fixed itſelf. Aph. 1259.

It is plain that the gout is naturally directed to the joints, but when the matter is either too redundant, or can no longer find admiſſion into the uſual places, it may then be diſperſed through every part of the body. We ſhall now conſider the particular ſymptoms during the paroxyſm, and the order in which they ſucceed one another.

APH. MCCLXI.

THE gout begins with a ſtretching, tearing, and ſtraitening pain, gradually increaſing, and again decreaſing with a moiſture, redneſs, and tumour; it terminates by a diaphoreſis, the heat of the bed, an itching, and ſcaling, or generating a chalky matter, tears the veſſels and ligaments of the joints, and deprives them of their figure, motion, and uſe.

Although there are ſome changes in the body, which commonly precede a fit when near at hand, yet they are ſo ſlight, that many either heed them not at all, or aſcribe them to errors in diet. Nay, they ſeemingly go to bed in good health, and are wakened at midnight with a pain, which uſually

ſeizes the great toe, but ſometimes the heel, the calf of the leg, or the ankle. The pain reſembles that of a diſlocated bone, attended with a ſenſation, as if water juſt warm was poured upon the membranes of the affected part; then immediately follows a chilneſs, ſhivering, and a ſlight fever. The chilneſs and ſhivering abate in proportion as the pain increaſes, which is mild in the beginning, but gradually becomes more intenſe every hour till the evening, when it arrives at its utmoſt degree of ſeverity.

A gentle moiſture of the ſkin ſoon follows, and then the patient falls into a ſleep, and when he awakes, rejoices to find the pain abated, and the part affected ſwelled all over; whereas, before, only a remarkable ſwelling of the veins thereof appeared, as is uſual in all *gouty fits* [a].

It is obſerved, that the ſevereſt gout is that in which there is neither ſwelling, nor diſcolouration of the part; becauſe it is probable the morbific matter is locked up and retained in the finer veſſels. But this cruel kind of gout very ſeldom happens.

The ancients obſerving, that the gout attacked ſuddenly, that it ſeized the extreme parts, that the veins became varicous, and that the pain was extremely violent, thought that the morbific matter was derived from ſome other place to the part affected, and this derivation they called a defluxion, or catarrh, which they believed to be in general the cauſe of all diſorders in the joints. They were the more confirmed in this opinion, as they obſerved the morbific matter accumulate in a certain time, and then fix itſelf in the uſual places. They alſo ſaw, that errors in diet brought on the diſtemper, and that it was cured or prevented by a ſober and regular courſe of life.

After the part affected is covered with a gentle moiſture, and begins to ſwell, the pain is relieved:

[a] Sydenh. de Podagra.

but

but the total expulſion of the morbific matter will be quicker or ſlower, according to its quantity, or the ſtrength of the patient. In ſtrong men, or thoſe ſeldom afflicted with the gout, the fit terminates in the ſpace of fourteen days: in older perſons, and thoſe who are ſubject to its attacks, it remains two months: but in thoſe whoſe conſtitutions are impaired by years, or frequent returns of the diſorder, it generally remains till the ſucceeding ſummer. Various other circumſtances may conſpire to prolong the diſeaſe: ſo that ſome miſerable patients are tormented by it the whole year, the two or three ſummer months excepted.

Sydenham[a] has alſo obſerved, that the pains are moſt violent in ſtrong conſtitutions; whilſt the weaker ſuffer leſs, and find themſelves rather indiſpoſed than in violent pain. This mitigation, however, is generally purchaſed by complaints in the bowels, laſſitudes, a propenſity to a diarrhæa, and where theſe are removed, the diſorder increaſes.

The patient is relieved from the paroxyſm two ways. This morbific matter which was collected about the joints, either paſſes off through the cutaneous veſſels, or degenerates into a cretatious ſubſtance, or chalk-ſtones, forming nodes in the joints, and preventing their motion.

The firſt of theſe is effected by a free perſpiration, which throws off an offenſive vapour of a peculiar acrimony, diſcolouring ſilver, &c. *Coſte*[b] imagines that this virus of the gout has a ſeptic quality, equally with the *lues venerea*, and that it may in a ſimilar manner be propagated to poſterity. Exerciſe is ſtrongly recommended to favour its expulſion.

The particular nature of this cretatious ſubſtance is diſputed. Some imagine it to be a ſpecies of tartar as it ſeems ſimilar to the calculi formed in the bladder,

[a] Trach. de Podag. pag. 553, 554. [b] Traité practique ſur la goutte. pag. 83.

which

which they imagine of a tartarous nature, as it ſeems to be increaſed by the free uſe of wines, in which tartar abounds; as the patient feels in the ligaments and joints an agonizing pain, as if they were corroding by quick-lime; and as both contain a large quantity of non-elaſtic air. Dr. *Whytt* [a] tried the effects of quick-lime upon theſe concretions, in order to diſcover whether they were the ſame as upon the calculi. He found, on pouring ſome lime-water upon a gouty concretion, it was at firſt ſpecifically lighter, but upon throwing off a quantity of air-bubbles, it ſoon ſunk to the bottom, and in a day or two became as ſoft as butter: whereas the effects of lime-water upon the calculi of the bladder are very different.

This gouty ſubſtance ſeems rather to partake of the nature of the earth, which converts cartilages into bones. Experiments prove that the difference betwixt cartilages and bones is, that the former is deſtitute of this earthy matter. By macerating a bone in acid, the earth diſſolves in the acid, and leaves the other part cartilaginous. If this bone had been coloured with madder-root, the colour is deſtroyed in the acid, and the cartilage remains perfectly clear. *Herriſant* [b] has obſerved, that theſe gouty concretions were intirely diſſolved in nitrous acid, without any cartilage or membrane remaining. Similar experiments with madder prove further, that not only the growth of the bones depends upon a conſtant ſupply of this earthy matter, but that it ſupplies the daily loſs occaſioned in the ſolid parts by the conſtant regular actions of the body. It is therefore natural to ſuppoſe, that this earthy ſubſtance is continually ſeparating from the bones, and expelled from the body, by the common emunctories; and that other ſubſtances of a ſimilar nature are brought by the veſſels to theſe parts, to make good the de-

[a] Medical Eſſays, tom. v. part 2. pag. 714. [b] Pag. 22.

ficiency

ficiency in older animals, and to promote the growth of younger. If then the veſſels ſhould be ſo changed by frequent attacks of the gout, and the contexture of the bones ſo deſtroyed, that what was deſtined to repair the loſs cannot arrive at the proper place, it is not ſurpriſing that it ſhould be depoſited in the adjacent parts, and create gouty ſwellings productive of various effects, and different kinds of lameneſs, according to the part in which it is depoſited.

APH. MCCLXII.

FROM all which it appears, that the proximate cauſe of the gout is a vitiated ſtate of the moſt minute, and conſequently nervous veſſels of the body; and alſo of that fluid which flows through the nerves.

It has been already obſerved, that very ſurpriſing and ſudden changes may happen in the body from hidden cauſes, which phyſicians have ſo often in vain ſearched after in the diſſection of dead bodies. For this reaſon, it has been concluded that the cauſe of all theſe wonderful effects muſt lie hid within the encephalon, or the nerves ariſing from thence: and that the root of the gout may be planted ſomewhere in the nervous ſyſtem, may be proved by many arguments. I ſaw a man who for two years was afflicted with this terrible ſymptom: namely, the moment he got up to ſtand with his body erect, he was ſeized with a vertigo, and fell down; but while he kept ſitting and at reſt, he was perfectly eaſy. Many remedies were preſcribed by the ableſt phyſicians without the leaſt benefit, till at laſt a ſudden fit of the gout, which he never had ſuffered before, freed him from this dangerous vertigo.

I had

I had the care of another perſon who was ſeized with a ſevere pain in the abdomen, with a delirium, and ſtrong tremor over his whole body, and then fell down epileptic. In the ſpace of a month, he had three ſevere fits of an epilepſy; a ſharp fit of the gout at laſt ſeized his great toe, by which he was intirely cured, and had afterwards a regular return of the gout twice a year. Beſides, the gout has all at once been cured by a great fright, and likewiſe by exceſſive joy, the *ſenſorium commune*, and nerves, being greatly agitated by theſe ſtrong and ſudden affections of the mind. *Hippocrates* and *Aretæus* held the ſeat of the gout to be in the leaſt veſſels, and likewiſe in the nerves. From all which, there is good reaſon to believe that the proximate cauſe of the gout is a vitiated ſtate of the ſmalleſt veſſels, or of that ſubtile fluid which flows through the nerves.

APH. MCCLXIII.

AND indeed this fluid may be faulty, by its acrimony, or too great a degree of viſcidity; and the ſolids from a narrowneſs and rigidity of their veſſels.

Many arguments prove the exiſtence of an acrimony in the humours. For although a high degree of pain may ariſe from over-ſtretched fibres, yet the moſt painful gout is certainly where there appears no ſwelling or redneſs upon the part affected, and where there is hardly any, or at leaſt a very ſmall degree of fever. When this is the caſe, phyſicians commonly aſcribe the diſeaſe to acrimony, yet the humours may be viſcid at the ſame time, and the acrimony ſo entangled with this viſcidity, as not to be ſeparated but with the greateſt difficulty. *Sydenham* blames acrimony, and *Coſte* held an acrimony of the humours joined to viſcidity to be the immediate

ate cauſe of the gout: nay, he allows a ſeptic acrimony which deſtroys both the bones and cartilages. *Liger* has maintained, that this diſeaſe intirely depends on an increaſed viſcidity of the humours, and is therefore produced by the uſe of ſuch meats and drinks as abound with viſcidity.

Too great a rigidity of the ſolids has alſo been blamed. Hence the gout more frequently attacks thoſe advanced in years, at which time the ſolid parts acquire more and more of this rigidity. For this reaſon, external cold, as it conſtringes the fibres, is ſo hurtful to gouty people, and frequently occaſions a fit.

APH. MCCLXIV.

HENCE the gout firſt ſhews itſelf in thoſe parts which are moſt diſtant from the brain, and which moſt reſiſt motion, on account of their ſolidity, hardneſs, exerciſe, and the weight incumbent upon them.

This is true in the firſt ſtages of the gout; for then the feet are always firſt attacked. But when the diſeaſe is more advanced, and the quantity of matter is more than the articulations of the feet can receive, then other parts are alſo invaded, as the hands, knees, &c. or it is in a ſurpriſing manner diſperſed through the whole body; eſpecially, if theſe parts are ſo obſtructed, or compreſſed, as not to receive the gouty matter.

APH. MCCLXV.

BUT the more immediate origin of this defect in the ſolids and fluids (Aph. 1262, 1263.) is from an indigeſtion of the viſcera, which does not ſufficiently attenuate and aſſimilate the aliments into a ſubſtance fit to ſupply the nerves with their proper fluid, which require the ultimate effect of the higheſt elaboration.

Sydenham, who applied the whole powers of his underſtanding in contemplating all the different phænomena of this diſeaſe, was perſuaded that it owes its origin "to an *apepſia*, or injured concoction of the "parts, as well as of the whole maſs of humours," and indeed what we have already ſaid of the gout confirms this opinion; for it generally attacks the rich, and thoſe who live in luxury and ſplendor, and ſome of theſe have been cured, when by unfortunate accidents they have been deprived of their riches, and obliged to gain a living by the ſweat of their brows; for labour and bodily exerciſe will either ſubdue or expel depraved humours from an imperfect aſſimilation of the aliments. He likewiſe recommends a diet of ſoft, well boiled, ſimple food, and adviſes gouty people to eat only a dinner; and particularly enjoins exerciſe, eſpecially walking, even although *it ſhould give ſome degree of pain.* Now, if we conſider the moſt approved remedies for the gout, we ſhall find them to be ſuch as are chiefly calculated to reſtore and excite the languid action of the chylopoietic *viſcera*, in order to effect a perfect aſſimilation. Nay, although the fluids which circulate through the larger veſſels, may be in all reſpects ſound, yet there may be ſomething not altogether agreeable to nature, remaining in the very fine veſ-

ſels, and in the moſt ſubtile fluids ſecreted from the blood, that flow through them, which being gradually augmented, and rendered ſtill worſe by ſtagnation, may occaſion various and ſurpriſing diſorders. See Aph. 1262. *Helmont* obſerving that this morbid degeneration reſided chiefly in the moſt ſubtile fluid of the body, concluded that the gout was hereditary, and that it might lie concealed for many years before it affected the nerves. Whence he aſſerts, "that this gouty diſpoſition is not intimately mixed "with the red blood, but with that which immediately ſupplies the ſubſtance of the ſolid parts; "for the blood itſelf, and all the alimentary appa"ratus, are many times changed and renewed, be"fore an hereditary gout makes its appearance." It is indeed wonderful that in hereditary diſeaſes ſomething ſo exceeding ſubtile ſhould exiſt in that very ſmall *molecula* which conſtitutes the rudiments of a human creature, and that it ſhould produce a diſeaſe, after lying, as it were dormant, the ſpace of thirty years.

But *Reaumur* has demonſtrated, that the vital rudiments of a living animal may remain unchanged for many years, and yet, when occaſion ſerves, it is capable of producing another animal of its own likeneſs. In the vegetable kingdom, the rudiments of a future plant, contained in a ripe ſeed, may be kept in that ſtate almoſt any length of time. In the human body many things of this kind occur, which plainly prove that certain latent principles remain a long time without any increaſe, till after ſome years, and then make their appearance all at once. The hairs from the very beginning are implanted in the ſkin that covers the *pubis*, yet they only appear about the time of puberty. In the broken jaw of a fœtus the firſt rudiments of the teeth appear very plain, not only of thoſe which come out at firſt, but alſo of thoſe which ſpeedily grow up, to ſupply the place of them that are ſhed by children of ſeven or eight years

of

of age. The laſt *dentes molares* remain a long time hid in their ſockets, and covered by the gums, even for twenty-five years, and later; then afterwards emerge with no ſmall degree of pain. It will not therefore appear quite ſo abſurd, that the ſeeds of the gout and other diſeaſes ſhould be ſo intimately conjoined to the firſt rudiments of the embryo, as not to ſhew themſelves by any ſign for many years, and at length, in ſome certain period of life, be awakened into action, and produce a diſeaſe alike in every reſpect to that which originally afflicted the parent.

APH. MCCLXVI.

THE reaſon of this indigeſtion of the viſcera (Aph. 1265.) may again be deduced from the remote cauſes enumerated at Aph. 1255 to 1258.

For if theſe are compared with what has been juſt now ſaid, it will appear that they are ſuch as diſturb and obſtruct the digeſtion, attenuation, or aſſimilation of the aliments; whence crudities ariſe, which will greatly favour the production of the gout.

APH. MCCLXVII.

TO produce this diſeaſe, we muſt ſuppoſe that almoſt all the functions of the concocting organs are vitiated, and that with ſcarce any perceptible defect in the larger veſſels, or in their fluids.

Errors committed in the non-naturals greatly diſturb the functions of the viſcera, and produce many other

other diſeaſes. But the gout may be produced from them, although there be no viſible defect in the larger veſſels, or groſſer fluids; for the matter which cauſes the gouty pain in the foot, often gives no ſign of its exiſtence, till it is depoſited on the joints.

Sometimes gouty people, during the intervals of the paroxyſm, believe themſelves to be in good health, nay, even when they have gone to bed very well, the cruel pain has waked them in the middle of the night; whence it was concluded that the more immediate cauſe of the gout reſided in the moſt ſubtile and fineſt parts of the ſolids and fluids. See Aph. 1262. But we obſerved, in treating of the epilepſy and intermitting fever, that the proximate cauſe of theſe diſeaſes lay alſo ſometimes in theſe very minute parts; hence theſe diſeaſes often change into, and ſometimes deſtroy each other.

APH. MCCLXVIII.

THE cure therefore is impoſſible, unleſs by ſuch medicines as are able to amend theſe defects entirely, and thoroughly to correct that moſt ſubtile peccant matter. For this reaſon, the gout has been hitherto accounted incurable, except by a few quacks and boaſting empirics.

To alleviate the pain, is not properly to cure the gout; but the true cure is, when there are no more returns of the diſtemper, even although the body is under the power of thoſe cauſes which are able to excite a paroxyſm. See Aph. 1258. For theſe procatarctic cauſes could by no means occaſion the diſeaſe, unleſs there was a cauſe pre-exiſting in the body, diſpoſing it to be gouty, which, as ſoon as you remove, you entirely cure the diſeaſe.

APH. MCCLXIX.

THE hereditary gout, and that which generates chalk-ſtones, is, of all others, the moſt difficult to cure.

APH. MCCLXX.

FROM the ſame, we may conclude, that bleeding does not reach the matter, ſeat, or cauſe of the diſeaſe, though it may ſometimes accidentally prove beneficial, by making a ſmall revulſion, and by leſſening the ſymptoms enumerated at Aph. 1257.

As the gout is chiefly ſeated in the fineſt fluids, and moſt minute veſſels in the body, it is plain, that no part of the morbific matter can be evacuated by bleeding; which only draws off the groſſer part of our fluids, namely, the red blood returning by the veins from the arteries, after all the finer liquids are ſecreted from it.

But the queſtion here, is not whether bleeding may not ſometimes be of ſervice, but whether it ought to be adviſed for the gout. If the patient be *plethoric*, or has accuſtomed himſelf to bleed at ſtated times of the year, then veneſection is without doubt neceſſary. If the matter of the diſeaſe is not depoſited on the uſual parts, and the paroxyſms are attended with a violent fever, delirium, or difficulty of breathing, bleeding is preſcribed, in order to alleviate theſe dangerous ſymptoms, and to determine the gouty matter towards the joints; for, as the celebrated *Mead* obſerves, the general effect of bleeding *is to make the diſtemper ſhift and change the place which it firſt poſſeſſed.*

APH.

APH. MCCLXXI.

NEITHER are vomits or purges of ſo great efficacy here as is commonly imagined; ſince they frequently raiſe commotions of the nervous fluid, carry off the finer liquids, and weaken the expelling faculty.

As gouty people feel the firſt ſigns of an approaching fit about the ſtomach and *præcordia*, as crudities, eructations, flatulencies, &c. it was thought that ſomething noxious was contained in the primæ viæ, which ought to be expelled either by vomit or ſtool. *Fernelius*[a], in a conſultation for *Albert* the younger, marquis of Brandenburgh, adviſes a purge "of ſtrength ſufficient to draw the ſuperfluous humours both from the parts above and below:" and if the pains continue, he adviſes it to be repeated a ſecond or third time. *Hoffman*[b] too aſſerts, "that "pains of every kind, in whatever place they are, "become milder, if the *primæ viæ* be firſt cleared, "before any other remedy is given,"&c.—If there are certain ſigns that noxious humours are collected in the primæ vie, to purge it off by gentle evacuations does not appear hurtful; but it is not by any means ſafe to diſturb the body with ſharp irritating medicines, in expectation of carrying off the gouty matter by ſtool, eſpecially if it is already depoſited on the joints, as we ſhall hereafter ſhew at Aph. 1273.

It is indeed true, that vomiting a ſharp and acrid matter has greatly relieved ſome perſons in the gout, a memorable inſtance of which was related at Aph. 1255. But this vomiting was ſpontaneous.—*Sydenham* was no friend to purging, yet he acknowledges that the morbific matter ſometimes goes off by ſtool.

[a] Part. ii. pag. 332. [b] Med. Rational. tom. iv. part 2. ſect. 2. pag. 529.

For when he treats of checking a gouty diarrhæa, he ſays, " if the gouty matter occaſions a diarrhæa, for want of being tranſlated to the joints, provided it be not the criſis of a particular fit, then he adviſes to raiſe a ſweat, which generally ſtops the diarrhæa, and forces the morbific matter to the limbs." By this method he ſaved his own life, when he had fallen into this danger by drinking imprudently cold water for his common drink. Nor did *Mead* expect much good from purgatives in the cure of the gout, but rather thought they made the diſtemper rage with greater fury at the joints.

APH. MCCLXXII.

SUDORIFICS ſkilfully adminiſtered are of greater benefit.

The ſeat of the diſorder lying in the more minute veſſels and finer fluids, it appears agreeable to reaſon, that the malady ſhould with greater ſafety be expelled through the orifices of the ſmaller veſſels which open upon the ſurface of the ſkin. Anatomiſts have diſcovered the incredible ſmallneſs of theſe cuticular pores, and *Sanctorius* has demonſtrated, that there flies off every day a very conſiderable quantity of the fineſt fluid through the orifices of theſe veſſels, which if retained long in the body would prove noxious, and give riſe to many diſeaſes. Beſides, a fit of the gout goes off by a gentle moiſture and diaphoreſis of the part affected. All which are ſtrong arguments for the uſe of ſudorifics.

Sydenham, though he had no great reliance on theſe, yet allows that to evacuate the peccant matter by ſweat, is leſs hazardous than when it is attempted either by purges or vomits. In the mean time, he gives this caution, " In the gout, that gentle moiſ-
" ture which commonly breaks out in the morning
" ſpontaneouſly after each of the leſſer paroxyſms,
" of

" of which the greater conſiſted, mitigates the pain " as well as the reſtleſneſs, which had afflicted the " patient during the whole night: on the other hand, " if this gentle moiſture, by nature apt to fly quickly " off, ſhould continue to be forced out in a larger " proportion than the matter concocted by the laſt " paroxyſm will bear, the diſeaſe will be rendered " more violent." Whence he ſeems to condemn only thoſe ſweats which are excited by hot ſtimulating ſudorifics, eſpecially during the time of the fit, leſt they ſhould drive the morbific matter too forcibly into the articulations, and by that means occaſion intolerable pains; and alſo, if the quantity of matter be great, leſt it ſhould fall upon other parts.

But *Sydenham* condemns the uſe of ſudorifics during the intervals of the fits, leſt the gouty matter, not ſufficiently concocted, ſhould be forcibly driven towards the joints, and a new paroxyſm be excited before the due time. But he was not averſe to ſuch ſudorifics as were gently aromatic, and properly diluted with water, as appears from the drink he preſcribed to his patients in the intervals of the fits, which is compoſed of china, ſarſaparilla, ſaſſafras, aniſeeds, &c.

APH. MCCLXXIII.

NOTHING can be more hurtful than to hinder the gouty matter, now ſufficiently ripe, and which cannot ſafely, by any other way, be carried off or corrected, to diſcharge itſelf at the uſual places, though indeed the moſt painful, are yet the leaſt dangerous. For if the retained matter ſeizes the brain, it occaſions apoplexies, palſies, deliriums, debilities, tremors, lethargies, and univerſal convulſions;—

if it attacks the lungs, it cauſes an aſthma, cough, and ſuffocation; — if it invades the pleura or intercoſtal muſcles, it produces an obſtinate convulſive pleuriſy; if thrown upon the abdominal viſcera, a nauſea, anxiety, vomiting, eructations, gripes, and ſpaſms of theſe viſcera; and I know not how many more diſeaſes, that often become ſuddenly fatal, which cannot be cured by means and methods effectual on all other occaſions, unleſs you bring on a freſh and ſmart fit of the gout. This danger happens from an imprudent uſe of narcotics, refrigerants, conſtringents, incraſſants; or from medicines which weaken, evacuate and revel towards the ſuperior parts. Hence bleeding vomiting, purging, cataplaſms, and all opiates, produce this effect; and ſo does the ſpontaneous weakneſs of decrepit old age; or when the extremities are ſo obſtructed, dried, and deſtroyed, that the morbific matter can no longer paſs through them. Hence it is plain, what kind of gout it is, and with what ſymptoms it is attended, that proves fatal to gouty people.

APH. MCCLXXIV.

THEREFORE the cure, which a due conſideration of the diſeaſe, and experience has directed, conſiſts, 1. In reſtoring the ſtrength of the viſcera. 2. In carrying off the corrupted fluids ſtill flowing in the veſſels, or ſtagnating in the parts affected. Aph. 1262, 1263.

To cure a diſeaſe, one ought to have a perfect knowledge of its particular hiſtory, which cannot be obtained,

obtained, but by an accurate and careful obſervation of all that happens throughout the whole progreſs of it. When this is known, the curative indication may readily be deduced. If a diſeaſe is treated agreeable to this indication, and a conſiderable relief, or a perfect cure follow, we may then be pretty certain, that the true method of cure has been purſued, and that it is confirmed by experience. The whole hiſtory of the gout ſhews, that exceſſes in the uſe of the non-naturals, are the moſt frequent cauſes of it, and that a well regulated uſe of them may alleviate the diſeaſe, even in thoſe who have it from an hereditary taint.

But the great difficulty in curing the gout ariſes from the different indications that are to be purſued. For the remedies that are neceſſary to reſtore the ſtrength of the digeſtive organs, are frequently hurtful by their heating qualities; on the other hand, thoſe which ſerve to cool and blunt the acrimony of the humours are manifeſtly injurious, by weakening the viſcera. And if we conſider the gout as a diſeaſe of old age, at which time the functions of the viſcera begin to grow languid, and perhaps weakened by ſome other chronic diſeaſe, there will be another very good reaſon, why the gout is ſo difficult to cure. Let us now ſee by what remedies, and with what caution, we are to proceed in order to perform theſe curative indications.

APH. MCCLXXV.

THE firſt intention of Aph. 1274, is obtained, by aromatic, bitter, and antiſcorbutic plants, chiefly taken in ſubſtance, mixed with honey. By lixivial fixed ſalts, taken for a long time in ſmall doſes, frequently repeated. By nouriſhing meats and drinks, that are light and of eaſy digeſtion. By hard and long con-

tinued riding in a pure country air, by friction, and by moving the parts frequently. By a great deal of ſeaſonable ſleep.

By aromatic, bitter, &c.] It is certain that ſuch remedies are of real ſervice in reſtoring ſtrength to the weakened chylopoietic *viſcera*, as they increaſe the action of the ſtomach and inteſtines upon the aliments, ſo as to obtain from them a proper quantity of good chyle, from which all the other ſecretions are ſecerned. Beſides, if the bile ſhould have loſt its natural degree of acrimony, the bitterneſs of theſe remedies correct that defect. *Sydenham* held theſe remedies in the higheſt eſtimation, "which by "their gentle heat and bitterneſs ſtrengthen the ſto-"mach, and mend the blood." To theſe he adds what are called antiſcorbutics, ſuch as *horſe-radiſh*, *ſcurvy-graſs*, *water-creſſes*, *&c.* He remarks at the ſame time that the *cortex peruvianus* is one of the beſt ſtrengtheners, and adviſes a few grains of it to be taken every morning and evening.

The *Portland powder*, ſo called for the great benefit the duke of *Portland* received from the uſe of it, is a remedy of this kind; but it ſhould never be given to thoſe who are of a bilious conſtitution. The form of this powder is as follows:

℞ Rad. Ariſtoloch. rotund.—Gentian.—Summit. Chamædr.—Champityos.—Centaur. minor āā part. æqual.

Theſe, dried, muſt be reduced to a fine powder, a dram of which is to be taken in a little wine, water, tea, or any other vehicle, in the morning faſting. The patient muſt take nothing for an hour and an half after it, and it is to be taken in this manner, without interruption, for three months; then three-fourths of a dram is to be taken the three following months,

months. For ſix months after, half a dram is to be taken every day; and the year following, it will be ſufficient if the ſame quantity be taken only every other day. Dr. *Clephane*[a] remarks, that it is ſometimes two years before any remarkable amendment is perceived, and adviſes the patient not to be diſcouraged from taking the remedy, even though the good effects of it ſhould not immediately appear.

But although the uſe of ſuch remedies ſeems in general to be pretty ſafe in the gout, yet we cannot deny, but that in ſome particular caſes it has not been ſo ſucceſsful. *Gaubius* relates one of a perſon about forty years of age, of a bilious conſtitution, who had been long afflicted with the gout, though he lived always regular, and in other reſpects healthy enough: yet being wearied with the diſeaſe, and willing to get rid of it, took every day a doſe of the *Portland* powder, for eighteen months, with this effect, that he kept free from his uſual paroxyſms.

But then a difficulty of breathing came on, which every day increaſed, ſo that in a few months he could hardly ſtir without panting for breath, which became more difficult even by ſpeaking. He had, beſides, a dry cough;—his whole body looked pale, and a ſlight œdematous ſwelling was obſerved in the hands and feet, and under the eye-lids. His tongue was white and dry; he was very thirſty,—made a great quantity of limpid, inodorous urine. His ſkin was dry,—his pulſe full and ſlow; his appetite little. He had ſcarce any ſleep, and though he could lie on either ſide, yet it was with his head a little raiſed. After trying various remedies to little or no purpoſe, he at laſt died ſuddenly. In the abdomen, nothing was ſeen to which his preceding diſorder or ſudden death could be attributed. In the cavity of the *thorax* was contained about twenty ounces of *ſerum*. A third part of the lungs was of a natural

[a] Med. Obſ. & Inquir. tom. i. pag. 126, &c.

ſoftneſs

ſoftneſs and colour, and when cut through, diſcharged a ſmall quantity of blood; but the reſt of the pulmonary ſubſtance, eſpecially towards the inferior part, was whitiſh, contracted, and contained within it ſeveral ſmall tubercles, about the bigneſs of a pea; which, when opened, contained nothing purulent, but a glary thick matter like that which is found ſometimes in the joints of gouty people. Hence we may reaſonably conclude, that the gouty matter, which uſed to be depoſited on the joints, was, by this antidote, thrown upon the lungs, and thus cauſed the preſent diſorder, and death.

By lixivial fixed ſalts, &c.] As an immoderate uſe of acids is numbered among the cauſes of the gout at Aph. 1255, the reaſon is plain, why alkaline ſalts are ſo beneficial here. Yet we are not to extol theſe remedies as an univerſal antidote againſt the gout, as they are of the utmoſt prejudice to perſons of a very bilious conſtitution, whoſe humours already tend to an alkaline putrefaction. But a phyſician who carefully attends to the nature of the diſeaſe, the antecedent cauſes, and the preſent ſtate of the patient, will not eaſily miſtake in the uſe of theſe remedies. In the *Materia Medica* of our author the *alcaheſt Glauberi* is much recommended, which is nitre converted into an alkaline ſalt, and diſſolved in the open air, commonly known in the ſhops by the name of *liquor nitri fixi*. Nine drops of this may ſafely be given every morning in ſome veal broth. Another remedy of the ſame kind is prepared from broom-aſhes infuſed in Rheniſh wine, half an ounce of which is to be taken every morning. A formula of this medicine is given in our author's *Materia Medica*.

Hoffman obſerved very great relief in the gout, from the uſe of abſorbent earths and lixivial ſalts, particularly when attended with acid vomitings; and therefore recommends the *Caroline* water to gouty perſons,

perſons, as it contains a conſiderable quantity of alkaline ſalts.

By nouriſhing meats and drinks, &c.] As the proximate cauſe of the gout may ariſe from a weakneſs of the *chylopoietic viſcera*, aliménts, and liquors of eaſy digeſtion, are highly neceſſary both to alleviate the diſeaſe, or even to cure it. Many place ſo great confidence in a vegetable diet alone, as to exclude all animal food whatever. *Lobb*, in his treatiſe on the gout, mentions ſome caſes, where ſuch a diet, not only kept the patient free from the gout, but even carried off the gouty tophous ſwellings. Yet they were ſenſible of many inconveniencies; their fleſh fell away, and their ſtrength was greatly weakened. If they afterwards eat ever ſo little of fleſh meat, they were ſure to have a return of the diſorder, though they abſtained entirely from wine. Whence we learn, that a vegetable diet does not by any means remove the prediſpoſing cauſe of the gout, but only weakens the force of the morbid matter, and renders the paroxyſms leſs ſevere, and leſs frequent.

Sydenham, from his own experience, has given us very good rules, with reſpect to diet. Two things he warns us to avoid, namely, the cramming down a load of victuals, and too ſtrict a kind of diet. He at the ſame time adviſes gouty people to abſtain from ſupper, and to take a large draught of very ſmall beer, to prevent calculous concretions in the kidneys.

Milk has been much extolled in the cure of the gout. It is an aliment of a middle nature, as it were, between the animal and vegetable kingdoms.—It contains a ſoft oil, called *butter*, a thin *ſerum*, or whey, which ſpontaneouſly turns ſour, and a cheeſy part, which comes neareſt to the nature of an animal ſubſtance. There are a number of obſervations which ſhew that a milk-diet has been of great ſervice to gouty people, and has even kept them entirely free from

from all paroxyſms, while they continued to live on it alone. But yet we do not find that it deſtroys the latent prediſpoſing cauſe of the gout itſelf. For which reaſon Dr. *Mead* warns old people in particular, and ſuch as have ſuffered a great many fits, againſt a ſtrict diet of milk and greens; for he had obſerved, "that if the gout kept entirely off, the "parts about the præcordia were ſure to be infeſted, "inſtead of the joints; beſides, that they loſt all "the uſe of their limbs, and remained in a miſerable "condition the reſt of their lives." But young perſons, he thought, who had ſuffered only two or three fits, might try this regimen, though he chiefly recommends it to thoſe, in whoſe family the gout is hereditary, and even then he dees not adviſe a very ſtrict milk diet; for he allows them once a day white meats, and ſometimes freſh-water fiſh, but excludes the uſe of all wine and ale. The ſame kind of diet is alſo recommended by *Coſte*, who found it very beneficial in his own caſe.

By hard and long-continued riding, &c.] By bodily exerciſe, all the powers concerned in aſſimulating the chyle, act more ſtrongly in a given time, than when one is at reſt. For this reaſon, thoſe who are accuſtomed every day to hard labour, eat and digeſt eaſily every thing that is offered to them, while thoſe who are ſunk in indolence, are oppreſſed even by the lighteſt food, and are perpetually complaining of flatulency. This bodily exerciſe, however, muſt be proportioned to the ſtrength and age of the patient, otherwiſe he may be debilitated by too much fatigue. Therefore riding is preferable to all other exerciſe, as it is the leaſt fatiguing, and particularly ſalutary when performed in a pure open air. Frictions applied to the parts that have ſuffered during the fits, always procure conſiderable relief, and are of particular ſervice to thoſe who obſerve no regimen in diet.

By

By a great deal of ſeaſonable ſleep.] During ſleep, the action of the heart and larger veſſels is increaſed, and the reſpiration ſtronger; by which means the crude humours will be thoroughly concocted, and the moſt perfect aſſimilation of the chyle produced; on the deficiency of which, the proximate cauſe of the gout in a great meaſure depends, as was ſhewn at Aph. 1265. Hence it appears, how neceſſary ſleep is to gouty people, and for this reaſon *Sydenham* earneſtly adviſes them to go to bed betimes, and to riſe early in the morning.

APH. MCCLXXVI.

THE ſecond intention of Aph. 1274, is obtained, 1. By a long-continued uſe of any volatile ſalt taken in the morning, in ſmall doſes, with a large draught of any mild apozem, in order to promote a gentle breathing ſweat, or moiſture of the ſkin, for an hour. 2. By warm frictions with dry linen cloths. 3. By draſtic purges, together with mercurials, giving towards the evening an anodyne draught.

When the ſtrength of the *chylopoietic* viſcera is ſo increaſed as to prevent the too great accumulation of the morbid matter, we are then to endeavour the expulſion of that matter which begins to be collected in the body, before it has time to produce a fit; or if that cannot be done, the quantity of it may at leaſt be ſo far leſſened, as to abate the violence of the diſorder: and this may be done by the following methods.

1. Five or ſix grains of Sal. C. C. or any other volatile alkaline ſalt is to be given early in the morning, drinking after it ſix or eight ounces of a warm infuſion of ſaſſafras, or of the decoction of the five opening roots.—Let the patient keep his bed an hour

hour or two after, then a gentle ſweat commonly breaks out, which, far from weakening, makes him more chearful and briſk. I generally order the feet and knees to be well covered, by which theſe parts have been thoroughly ſweated, while the reſt of the body has only gently perſpired. This method was continued for two or three months, in the intervals of the paroxyſms, and always with remarkable ſucceſs. Bathing is alſo of uſe to keep the ſkin clean and perſpirable, eſpecially in dry habits; but it does not agree ſo well with pale leucophlegmatic people, who are more benefited by frictions univerſally applied.

2. The efficacy of frictions in this diſeaſe has been already diſcuſſed.

3. Draſtic purges not only evacuate whatever is contained in the inteſtines, but alſo diſſolve the humours, and carry them off by ſtool. The *celebrated Boerhaave* adviſed his gouty friend Baſſand, to take a purge of this kind every three months, compoſed of one part of pure ſcammony, and two parts of diaphoretic antimony, the addition of which greatly improves the efficacy of the ſcammony. This medicine is alſo uſed with great ſucceſs in the cure of intermittents, when given eight hours before the fit. As mercurials are accounted no inconſiderable diſſolvents, a few grains of *mercurius dulcis* may be added to this purging medicine. In the mean time, it is to be remembered, that purgatives and reſolving remedies are proper only in conſtitutions inclined to fatneſs, or which abound in mucous phlegmatic humours; for in lean habits of body, they are by no means proper.

APH.

APH. MCCLXXVII.

BY theſe medicines, and by this method of cure, much good may be done, even in the tophaceous gout.

Although the gout is very difficult to cure, yet if it be in that ſtate repreſented in the two preceding aphoriſms, there is great hope of curing the diſorder, or at leaſt of procuring very conſiderable relief, provided the patient will ſtrictly follow the directions of his phyſician. For, however common the maxim may be, that the tophaceous gout is incurable, nevertheleſs there is nothing more certain, than that a great deal of good may be done, even in this ſtate of the diſeaſe. *Sydenham* obſerves, that by daily and long-continued exerciſe, indurated *tophi*, of very long ſtanding, had been reſolved, and at length entirely diſappear. Hence it is evident, that this matter is not altogether indiſſoluble; neither is art deſtitute of means, when rightly applied, capable of reſolving theſe ſort of tumours.

As this gouty calx eaſily diſſolves in acids, ſome have attempted to reſolve them by the external application of acids, which, however, ought to be ſo mild as not to hurt the ſkin. Oil of turpentine, impregnated with *Glauber*'s ſpirit of ſea-ſalt, has been applied to the gouty *tophi* with very good ſucceſs. Remedies, however, of an alkaline nature have been more frequently uſed. *Galen* took a piece of fat cow-milk cheeſe, that had been kept a long time, and this being macerated in the broth of a ſalted leg of pork, was applied to the gouty *tophi*, with ſo good an effect, that the ſkin broke, and every day diſcharged little pieces of chalky matter without any pain. The ſame remedy was afterwards tried on ſeveral others, with equal good ſucceſs. *Ætius* prepared

pared a medicine for the gout, of a *lixivium* and the *ſpume* of nitre, which he calls *eroſive*, becauſe it raiſes bliſters and excoriates the ſkin. He likewiſe recommends quick-lime, with an equal quantity of nitre mixed with hog's-lard, and applied to the chalky tumours. But the nitre of the ancients was very different from that of the moderns, and of an alkaline nature: beſides the acrimony of alkaline ſalts is very much increaſed by the addition of quick-lime. As the remedies recommended by the ancients were chiefly of an alkaline nature, I prepared one of a ſimilar kind, which indeed contains a fiery acrimony, but is ſo diluted, that it cannot poſſibly prove hurtful, yet has all the efficacy of a powerful ſolvent.—I took crude tartar reduced into a powder, and mixing it with thrice the quantity of quick-lime, placed it in a clay furnace, keeping it a proper time in a ſtrong degree of heat. When the furnace was cold, I cauſed this ſaline maſs to be diſſolved in water, filtered and evaporated into a ſalt, which was kept in glaſſes well ſtopped to exclude the air, and prevent it from liquifying. So much of this ſalt I diſſolved in pure water, or that diſtilled from roſes, or elder-flowers, as, upon taſting, left no acrimony on the tongue, or any thing diſagreeable to the taſte: for then I was ſure it could do no injury to the ſkin. The gouty tumours were bathed with linen cloths dipped in this ſolution warmed, with ſuch happy effects, that ſometimes, in a few days, they were entirely diſperſed. In exoſtoſes alſo, and in other obſtinate tumours, I have found the ſame do a great deal of good. Hence we ſee the reaſon, why ſoap is ſo harmleſs, and at the ſame time ſo efficacious, in reſolving gouty *tophi*; but from this *lixivium* ſtill better effects may be expected. *Hoffman* recommends the volatile tincture of ſulphur, prepared from quick-lime, ſal ammoniac and ſulphur, applied to any part, where gouty *tophi* are to be

be feared. He likewiſe extols the Balſamum Sulph. Antimoniatum as a ſovereign remedy for the ſame purpoſe.

APH. MCCLXXVIII.

IN extreme neceſſity, and to ſoothe the raging pain of the parts, we may often uſe opiates internally, plentiful draughts of milk whey, or any other thin diluting liquor, drank warm; and externally, emollient, anodyne, warm applications, or even whipping the part with nettles, or anointing with torebinthinated balſam of ſulphur, or burning with *moxa*.

To ſoothe the raging pain, &c.] As the pain is ſometimes ſo great, as to exceed all human patience, the wretched ſufferer calls out to his phyſician, his friends, and to all preſent, to procure him ſome reſpite from his torment, and is ready to try any remedy that can flatter him with the leaſt hope of relief; whence there has ariſen an almoſt infinite number of remedies. But as pain is alleviated, either by removing the cauſe, or the ſenſe of it, the firſt method is always the ſafeſt, though it cannot be obtained at all times in the gout; for the morbid matter can only be ſubdued by degrees, and while this is performing, the pain often rages to an unſufferable degree. But the principal remedies to eaſe pain, are ſuch as blunt acrimony, and ſoften and relax the parts affected. Weak veal broth, large draughts of thin whey, infuſions of the emollient herbs, and the like, are here of real ſervice, yet they are not ſufficient to procure immediate relief. *Sydenham* condemns all external remedies, and *Caſte* found the uſe of cataplaſms hurtful, and only kept the parts wrapt up in warm flannel.

The next, and almoſt only thing that can be done, is to leſſen the violence of the pain by the uſe of narcotics. See Aph. 229. *Sydenham*, although he gave opiates freely in ſeveral other diſeaſes, was very cautious in giving them to allay pains of the gout. However, if the pain be really ſo violent as to require the uſe of opiates, a ſmall quantity of laudanum may be taken in the evening; otherwiſe it is better to omit it, for an improper uſe of narcotics hinders the gouty matter from being determined towards the uſual parts. The ancients ſometimes applied narco ic remedies to the external parts, but ſeem always to have apprehended danger from their uſe.

APH. MCCLXXIX.

BUT external applications in any other circumſtances, will ſooner occaſion an induration of the part affected, and an immobility of the joints.

It is certain from obſervation, that the joints ſtiffen ſooner, the more they have been peſtered with ointments, plaſters, and the like.

APH. MCCLXXX.

BUT the moſt efficacious remedy is that, which is moſt oppoſite to the cauſe from whence the gout ariſes.

APH. MCCLXXXI.

BUT if there are ſigns that the gouty matter has ſeized the internal parts, we muſt, without delay, endeavour to drive it to the joints:

joints: therefore, let large bliſters be immediately applied to the thighs, and warm ſaline aromatic fomentations to the parts uſually pained. Let the patient walk a great deal, or be well jolted in a carriage; let him alſo drink large quantities of ſome ſudorific aromatic decoction; or if that does not anſwer, ſome good old Rheniſh wine. When this is done, and the pains begin to be felt in the uſual parts, let him be put into a warm bed, and be well covered in order to ſweat.

Sydenham, when the pains ſuddenly left the joints, and was ſucceeded by great ſickneſs, oppreſſion, vomiting and gripes, immediately ſwallowed ſome pints of ſmall-beer, or other weak liquor, and as ſoon as this was rejected by vomit, took eighteen drops of laudanum in a little Canary wine, went to bed, and compoſed himſelf to reſt. By this method, he aſſures us, he has been frequently reſcued from imminent danger.

APH. MCCLXXXII.

WHOEVER duly conſiders all this, will ſee the great difficulty in curing the gout, and likewiſe the reaſon why the moſt eminent phyſicians and chemiſts have ſought a cure for it in ſuch remedies as renew the blood and juices; why, and how far, milk contributes to this end; whether a ſpecific acrimony in the red blood is the cauſe of the gout; whence *nodi*, *tophi*, and chalk are generated; why a fit of the gout without any ſwelling is the moſt painful, and why it is milder when the parts ſwell; why the pain, at laſt ceaſes in gouty people;

why the intervals are the longeſt and eaſieſt, when the paroxyſms are the moſt ſharp and painful; why, when the violence of the pain ceaſes, the patient is hardly ever entirely free from the diſorder; whether there be any alkaline abſorbent, which can wholly extirpate the gout; why *Sanctorius*'s ſtatical chair is the beſt director and preſager of what will happen, and of what ought to be done for gouty people. But the gout, whether it reſides in the *vital ſpirit*, in the moſt thin humour of the joints, or in the *ſemen* itſelf, is diſcovered only by its violent effects.

To alleviate the pain, or even to take it wholly away, is not to cure the gout; for as *Helmont* well obſerves, the pain, the burning heat, and the ſwelling, are not the gout, but the viſible effects of it. He therefore who would cure the gout, muſt remove the prediſponent cauſe, whether it be hereditary, or contracted by intemperance, and other cauſes enumerated at Aph. 1255.

In ſuch remedies as renew the blood, &c.] *Sydenham* believed that the whole ſubſtance of the body might be converted into a gouty *fomes*, and therefore laid it down as a rule, that he who attempts to cure the diſeaſe, muſt change the whole habit of the body. The ancient phyſicians placed great confidence in the uſe of hellebore, as a powerful alterative in the moſt obſtinate diſeaſes, and *Aretæus* recommends it in the gout. The chemiſts relied on their *arcana*, which they believed could reach the moſt intimate receſſes of the vital ſpirit, and radically deſtroy the ſeminal character.

Why, and how far, milk, &c.] This does not deſtroy the morbid character, but keeps off the exciting cauſes, as it is an animal humour already prepared

pared in the body, and eaſily aſſimilated by weak *viſcera*.

Whether a ſpecific acrimony in, &c.] It was obſerved at Aph. 1263, that too great an acrimony, joined to a viſcidity of the humours, might be one cauſe of the gout, yet it cannot be reckoned an univerſal cauſe.

Why a fit of the gout without, &c.] Becauſe the matter which occaſions the pain ſticks in the moſt minute veſſels, which being diſtended, excite the greateſt torments.

Why the pain at laſt ceaſes.] Becauſe by old age, or the long continuance of the diſeaſe, the powers are weakened, and unable to drive the gouty matter towards the joints.

Why the intervals are the longeſt, &c.] Becauſe the whole morbid matter is thrown upon the joints, and a longer ſpace of time required to collect matter ſufficient to produce a new paroxyſm.

Why when the violence of the pain ceaſes, &c.] When the powers are no longer able to depoſite the morbid matter upon the joints, there remains ſome morbid *fomes*, which can never after be entirely diſſipated; whence perpetual, though gentle pains, till at laſt the morbific matter falls upon ſome of the viſcera, and puts an end to life.

Whether there be any alkaline abſorbent, &c.] The chemiſts, who are too haſty in forming general axioms, obſerving the good effects of alkaline ſalts in gouts ariſing from an abuſe of acids, immediately concluded, that every gout might be cured by theſe alone. But an acrimonious acid does not always prevail in this diſeaſe, yet, we muſt allow, that alkaline ſalts may, by their gentle diſſolving power, be of great benefit, even where there is no acrimonious acidity.

Why Sanctorius's ſtatical chair, &c.] For gouty people may by this chair regulate the uſe of the non-naturals.

Of the DISEASES of VIRGINS.

APH. MCCLXXXIII.

BESIDES all theſe various kinds of acute and chronic diſeaſes, there are ſome peculiar to virgins, to women with child, women in labour, and after delivery, and alſo to children.

As we are to conſider each of theſe diſorders ſeparately, order requires that we begin with that remarkable change obſerved in a female about the time that the *menſes* make their firſt appearance, and conſider the various diſorders that uſually either precede or accompany that diſcharge.

APH. MCCLXXXIV.

WHEN the body of a woman comes to its full growth, and is in a good ſtate of health, there is uſually more blood generated, than can be contained in the veſſels; this ſuperfluous blood is evacuated from the uterine arteries under the name of the *menſtrual flux*.

APH. MCCLXXXV.

IF this redundant blood be retained, in a body that is in a good ſtate of health, there will ariſe a plethora; a ſluggiſhneſs; heavineſs; a paleneſs; a pain in the loins and groin, and a depravation of almoſt all the natural, vital, and animal

animal functions; all which effects are eaſily deduced from the preſſure of the veſſels, produced by a ſtagnation of the redundant blood.

APH. MCCLXXXVI.

THE redundant blood thus accumulated, frequently opens to itſelf the moſt ſurpriſing paſſages, as through the eyes, ears, noſtrils, gums, the ſalivary glands, the œſophagus, inteſtines, bladder, breaſts, ſkin, wounds and ulcers.

APH. MCCLXXXVII.

AND very often all the viſcera are injured by this accumulated blood, and an infinite number of diſeaſes produced, partly from a putrefaction of the liquids, and partly from the hurt done to the veſſels.

When a redundance only of good and wholeſome blood can produce the bad effects enumerated at Aph. 106, what worſe conſequences may we not expect from humours that have ſtagnated a long time, and acquired a great degree of acrimony! by which the veſſels are not only much more injured, but more dangerous diſeaſes produced, either in the *uterus* itſelf, or in ſome other of the *viſcera*. Hence alſo the reaſon appears, why *Hippocrates* has ſaid, "that "the *uterus* is the ſpring from whence all female "diſorders ariſe."

APH. MCCLXXXVIII.

THIS diſeaſe is known, 1. From the age of the patient. 2. From her full growth. 3. From a plethora. And 4. From the ſigns of the ſubſequent diſorder.

APH. MCCLXXXIX.

IN order to carry off the redundant blood, various remedies are required, according to the various cauſes of the diſorder.

It would be in vain for us to attempt to bring down the *menſes* in a pale leucophlegmatic girl, where, for want of ſound blood, the functions are all languid, till we firſt ſtrengthen her lax and weakly body, and enable the *veſſels* and *viſcera* to extract a proper quantity of good blood from her aliment. On the contrary, if the uterine veſſels are too much contracted, then an oppoſite method of cure is requiſite; for this reſiſtance of the veſſels is only to be removed by the moſt emollient remedies, externally and internally adminiſtered; and ſo of the reſt, each of which cauſes we now proceed to conſider ſeparately.

APH. MCCXC.

AMONG which, there is ſometimes a natural, and ſometimes an occaſional concretion of the *pudenda*, that requires the hand of a ſkilful ſurgeon to open, with a proper inſtrument.

We

We are certain from a great number of obſervations that the *pudenda* have either ſo grown together, or have been ſo ſtopped up by a membrane running acroſs the cavity of the *vagina*, that not one drop of blood can poſſibly get out. This concretion of the *pudenda* is, however, ſometimes natural, but more frequently happens from diſorders of theſe patts, ſuch as excoriations, inflammations, ulcers, &c. and then it is called *occaſional*. But the menſtrual flux may be ſuppreſſed by many other defects, as appears both from the obſervations of the ancient and modern phyſicians.

APH. MCCXCI.

BUT when a retention of the *menſes* ariſes from a ſtagnation of the blood, their return may be procured, 1. By bathing and rubbing the feet. 2. By bleeding in the foot. 3. By uterine purgatives. 4. By emmenagogues. 5. By plaſters, fomentations, liniments and ſteams, externally applied. 6. By ſtrengthening the veſſels weakened by the *plethora*, with chalybeat and aſtringent medicines.

We come now to conſider thoſe remedies which reſtore the menſtrual flux, when it is ſuppreſſed from any morbid cauſe. But as in different countries, and alſo in the ſame country, nay even in the ſame family, the menſes appear at different times, great caution is neceſſary not to force them by unſeaſonable remedies; for it is more the work of nature than of art. Hence appears the abſurdity of giving hot ſtimulating emmenagogues before the *uterine* veſſels are ſufficiently dilated and prepared for diſcharging the menſtrual blood. I have often ſeen a ſpitting of

blood, and violent hæmorrhages from the noſe, ariſe from an imprudent uſe of theſe remedies.

It is alſo to be remarked, that the menſtrual flux is an evacuation of red blood, and therefore ſuppoſes ſuch a quantity to be in the body, as may be diminiſhed, without any injury to its health. For this reaſon, girls who labour under a *chloroſis*, whoſe lips, gums, and eyes look pale; whoſe bodies are ſoft, cold and flabby, and on the leaſt motion are out of breath, cannot bear the ſmalleſt quantity of blood to be taken away by veneſection, without becoming ſtill more languid. But if there is a lively florid colour in the countenance, an equal heat all over the body, and ſigns which ſhew that the uterine veſſels are preſſed, then the remedies may take place, which are recommended in this aphoriſm, namely,

1. Bathing and rubbing the feet.] As the feet and legs receive their veſſels from the external iliac arteries, and the *uterus* both from theſe and the hypogaſtrics, which communicate by various *anaſtomoſes*, it is evident, that when the veſſels of the feet are relaxed by warm bathing, and the motion of the blood accelerated in thoſe parts by friction, a greater quantity of blood will be derived towards the *aorta*, where it divides the iliacs, and cauſe a greater preſſure upon the veſſels of the *uterus*, and ſo dilate their extremities, as to give an eaſy vent to the menſtrual diſcharge. Warmth in the feet is alſo of great ſervice at the time of menſtruation, and cold very injurious; nay, I have frequently ſeen the *menſes* all of a ſudden ſuppreſſed by this.

2. Bleeding in the foot.] Bleeding in a ſuppreſſion of the *menſes* is only neceſſary where there is a plethora; for if they are deficient from a want of good blood, *repletion*, not *evacuation*, is the remedy. Nor even, when the plethora degenerates into a *cacochymia*, is it always requiſite to bleed, but rather by other evacuations, which do not leſſen the quantity of good blood, to carry off the peccant humours, or

ſo

ſo change them, as to acquire again the nature of healthy humours. *Manningham* remarks, that "a "dropſy of the belly, for the moſt part, ariſes either "from an obſtruction, or a total ſuppreſſion of the "*menſes*." In a dropſy from this cauſe, bleeding muſt be injurious, though it may ſometimes be of ſervice in a ſuppreſſion of the *menſes*, which was the original cauſe of the dropſy.

To leſſen the quantity of good blood, it is ſufficient to open a vein in any part of the body; yet we ſee that almoſt all phyſicians direct bleeding in the feet, and *Galen* abſolutely inſiſted upon it. But ſince the diſcovery of the circulation of the blood, the advantage of bleeding in the foot is more clearly underſtood; and although it is not of ſervice in every ſuppreſſion of the *menſes*, it is certainly ſo in a great many caſes. If at the time of the menſtrual period, a tenſion and ſenſe of weight be felt about the pubes and groin, with a pain in the loins, we know, that the uterine veſſels are quite full and diſtended, though the extremities of the arteries opening into the cavities of the *uterus*, may not, at the ſame time, be ſufficiently dilated to allow the diſtending blood to paſs. But if theſe veſſels are relaxed by warm bathing, and the motion of the blood, at the ſame time, increaſed, this reſiſtance at the extremities of the veſſels may be removed, and an eaſy diſcharge of the menſes obtained, and of courſe a removal of all theſe troubleſome complaints.

It muſt however be conſidered, that by the *plethora* the larger veſſels are diſtended, the ſecretions by the leſſer altered, the veins compreſſed, and the extreme orifices of the ſmaller arterial veſſels ſhut up by the diſtention of the larger branches, and thus a free circulation is prevented. Whilſt the uterine veſſels are thus diſtended, they will be unable to contract themſelves, or to propel the blood contained in them, whence the fluids will begin to ſtagnate. But as ſoon as a vein is opened in the foot, the blood will be

be driven with greater force, and in a larger quantity into the crural artery, the uterine veſſels will be leſs compreſſed, and leſs diſtended; the arteries will begin to contract, and propel the blood into the veins, which may now empty themſelves into the iliac veſſels: hence a free circulation through the ſubſtance of the *uterus*, the extreme orifices of the arteries will be eaſily dilated, and the menſtrual flux reſtored, whether the obſtruction be owing to a plethora of the whole body, or to one of the *uterus* alone.

3. Uterine purgatives.] If the *menſes* are ſuppreſſed from a plethora of the whole body, then, after bleeding, antiphlogiſtic purges, which diſſolve and evacuate the humours, without increaſing the circulating motion, ſuch as thoſe prepared from tamarinds, ſenna, cream and cryſtals of tartar, &c. But the uterine purgatives, are ſuch as have, with their cathartic virtues, a power of reſolving tough and viſcid humours, and are principally uſeful when the menſes are ſuppreſſed from a bad habit of body. For the *primæ viæ*, in this ſtate, are generally loaded with a deal of viſcid humours, which ought firſt to be reſolved, and then expelled the body; but care muſt be taken not to raiſe a *hypercatharſis*, which would weaken the body too much. For this reaſon, myrrh, gum ammoniac, galbanum, bdellium, &c. are, in the *Materia Medica*, among the uterine purges of this claſs, becauſe they move the body only gently; whilſt their aromatic flavour, ſo friendly to the nerves, diffuſes itſelf through the primæ viæ, diſcuſſes flatulencies, and rouſes the languid action of thoſe viſcera, by a grateful, and yet not too heating a ſtimulus. Bryony and colocynth, are here placed among the uterine purgatives; but theſe muſt be given in very ſmall doſes, and added to the milder uterine medicines, as myrrh, galbanum, &c. If the eighth part of a grain of colocynth be given every three or four hours, it does not purge, but has wonderful effects in languid phlegmatic habits. However,

ever, colocynth hardly deſerves a place among the uterine purges.

Aloes has obtained the firſt place amongſt theſe purges, which, at the ſame that it purges the belly, ſtrengthens the ſtomach. This medicine given in ſmall doſes of three or four grains, or mixed with the aromatic juſt mentioned, is of excellent uſe in a ſuppreſſion of the menſes, and when a cuſtomary evacuation of the hæmorrhoides happens to be ſtopped.

4. Emmenagogues.] But theſe remedies are not to be given indiſcriminately, but muſt be left to the judgment of the phyſician, to ſelect, in each caſe, ſuch as may be given with the greateſt ſafety and advantage; and, if the curative indications require the uſe of forcing medicines, prudence will lead him to begin with the gentler ſort, gradually advancing to thoſe of a more ſtimulating nature.

But as the fluids may ſtagnate in the veſſels from too great a degree of viſcidity, many phyſicians have placed great confidence in ſuch remedies as, beſides their ſtimulating qualities, have a power of reſolving and attenuating. With this view, the celebrated *Mead* gave, among other things, mercury ſix times ſublimed; but above all, he recommends black hellebore, a tincture of which, he gave a tea-ſpoonful twice a day in a draught of water, and never knew it to fail.

Different authors have recommended different remedies, but always ſuch as act either by increaſing the motion of the humours, or by reſolving them, or by both theſe powers united. But if the expulſive powers are increaſed by ſtimulating remedies, before the liquid to be diſcharged is properly attenuated, or the emiſſaries through which it is to paſs be ſufficiently pervious, all the complaints will be exaſperated by warm emmenagogues, and dangerous hæmorrhages ariſe from different parts of the body.

5. Plaſters.

5. Plaſters, fomentations, &c.] For all theſe remedies ſoften and lubricate the parts, and render the veſſels more eaſy to be dilated.

6. Strengthening the veſſels, &c.] One of the effects of a plethora is too great a dilatation of the veſſels. If therefore the veſſels are over diſtended, and weakened by the plethora, then chalybeats and aſtringents are proper; and the more ſo, as the habit of the body in women is naturally lax. See Aph. 28. No. 4. and Aph. 106.

APH. MCCXCII.

HAVING by theſe means removed the cauſe of the diſorder, almoſt all the bad ſymptoms enumerated at Aph. 1285, to Aph. 1287, diſappear of courſe: or they are cured in the ſame manner with the diſeaſe they moſt reſemble, which may be eaſily performed by attending to the rules already laid down.

The diſeaſe they moſt reſemble.] Thus, if a long ſuppreſſion of the *menſes* ſhould occaſion a phthiſis, it is to be cured by the methods directed in the chapter concerning a pulmonary conſumption.—If it cauſes hard tumours in the breaſts, they are to be treated as a ſcirrhus.—If it lames the patient, or diſables ſome particular part, the cure is to be taken from that of the palſy, or from the diſeaſes incident to the joints: the ſame holds true with regard to all the reſt.

Of

Of the Diſeaſes of Women with Child.

A P H. MCCXCIII.

A Woman with child is liable to many diſorders, which owe their origin entirely to pregnancy.

A P H. MCCXCIV.

SOME of which ariſe from a ſuppreſſion of the menſtrual diſcharge, the *os uteri* being ſhut up, and the fœtus as yet unable to take up the whole redundant blood for its nouriſhment and growth.

But the blood thus retained in pregnant women is not ſo much intended for the uſe of the *embryo* itſelf, as of the *uterus*; from this uterine blood the finer humours are indeed ſecreted for the uſe of the *embryo*, but it receives no red blood during the firſt weeks of conception. I have had opportunities of examining the ſmalleſt *embryos* together with their membranes and *placenta*, but never could diſcover a drop of red blood, either in the *embryo* itſelf, or in the membranes, or in the *placenta*, which in the beginning covers almoſt the whole ſurface of the *chorion*. But the *uterus* being entirely vaſcular, is gradually diſtended, ſo that its cavity ſhall by degrees be ſo dilated, as to contain the fœtus, with its ſecundines and waters. But as the ſubſtance of the uterus in women not with child is compact and fleſhy, and the cavity ſo very ſmall, many believed that the *uterus* grew thinner as it was diſtended, and that the thickneſs

neſs of its ſubſtance diminiſhed in the ſame proportion as the cavity enlarged. *Galen* was of this opinion, and *Mauriceau* obſtinately defended the ſame. But this opinion is judiciouſly refuted by *Daventer*, *Littre*, *Noortwych* and others.

From this vaſcular ſtructure of the uterus, it is very evident, that the menſtrual blood, which in women with child, according to the law of nature, is retained in the body, ſerves not only for the growth of the fœtus, but alſo for filling and diſtending the veſſels of the uterus at the ſame time. This obſervation is of no ſmall importance in the cure of diſorders incident to women with child. How admirably does this correſpond with the doctrine of *Hippocrates!* who ſays, "When a woman is with child, the blood "is gradually brought from every part of the body "to the uterus; and this, which is collected, as it "were, in a circle, all about the *uterus*, cauſes it to "increaſe."

The human *ovum*, therefore, which is not only every where contiguous to the concave ſurface of the *uterus*, but connected with it, is perpetually cheriſhed by the conſtant warmth of the red blood contained in the ſubſtance of the ambient uterus, and thus an incubation goes on within a woman's body, which, in oviparous animals, is performed without their bodies. Whence it appears to what admirable uſes the menſtrual blood is aſſigned. The great *Harvey* aſcribes to the red blood the formation and growth of the tender *embryo*, and maintains that it exiſts even before the heart or veſſels. In a fecundated egg, the firſt rudiments of the chick may remain a long time without any ſigns of life or increaſe. Let a due degree of heat, whether by the ſitting of the hen, or by any other means, be applied, we immediately find motion, life, and a gradual increaſe in ſo quick a progreſſion, that in the ſpace of twenty days, the moſt minute *molecula*, before eluding the quickeſt ſenſe, ſhall now exhibit a chicken in full per-

perfection. Does not that plentiful circumfuſion of warm blood circulated through the uterine veſſels, in like manner contribute towards the nouriſhment and growth of the human *embryo?*

APH. MCCXCV.

OTHERS ariſe from the bulk and motion of the fœtus, and of the ſecundines and waters, acting upon theſe very ſenſible parts.

The gravid uterus raiſes its fundus or bottom into the abdomen, compreſſes the viſcera there, removes them from their natural ſituation, and the greater the preſſure, the larger the ſpace it occupies. In the firſt months of pregnancy, the *uterus* can occaſion no great uneaſineſs from its bulk; but in the following months, to the time of delivery, it may be the cauſe of many inconveniencies. There are many ſurpriſing changes of the viſcera related by authors, which ariſe only from this diverſity of preſſure. From this cauſe, *Mauriceau* and others have deduced many of the ſymptoms which attend pregnant women; and from this alſo, the reaſon appears why ſome women, towards the end of their pregnancy have troubleſome reachings, which cannot be removed till after their delivery. The only relief is, to eat and drink but little at a time, and frequently; ſo as not to diſtend the ſtomach.

However, there is reaſon to hope, that after delivery the *viſcera* may reſume their natural ſituation, though this does not always happen; for ſometimes the *omentum*, after delivery, is collected together about the middle of the belly, and frequently occaſions no inconſiderable degree of pain. *Ruyſch* ſometimes obſerved hard tumours, of an oblong form, remaining in the abdomen after delivery, and confeſſes he was long doubtful what to think of them,

till, in diſſecting a dead body, he found the "*omen-*
"*tum*, which was two fingers breadth in thickneſs,
"three fingers broad, and about a ſpan and an half
"in length, degenerated into a fattiſh, fleſhy ſort of
"ſubſtance, and ſcirrhous beſides." This bulky tumour alſo adhered to the bottom of the ſtomach, and below to the *fundus uteri*. *Ruyſch* further adds, that he had ſeen ſuch tumours in living ſubjects, and that women had bore them for many years without any pain, though not without ſome little inconvenience.

APH. MCCXCVI.

FROM the firſt cauſe, that is, a retention of the menſtrual flux, ſeem to ariſe the nauſea, vomiting, loſs of appetite, or one totally depraved; faintings, vertigos; intenſe pains of the ſtomach, pubes, groin, kidneys, and breaſts; a torpor and ſenſe of weight, a difficulty of breathing, and abortions.

Theſe are the principal ſymptoms which uſually attend pregnant women; not that they all appear in every woman with child, but a greater or leſſer number are to be met with in different women.—All theſe diſorders are uſually aſcribed to a retention of the *menſtrua*; but as a conſiderable part of the menſtrual blood is conſumed in filling the uterine veſſels, at this time enlarged; a juſt doubt ariſes, whether theſe ſymptoms are entirely owing to a *plethora* alone. See Aph. 1294.—A *plethora* has undoubted ſigns by which it may be diſtinguiſhed. Are theſe ſigns to be found in every pregnant woman? A more than ordinary contraction and hollowneſs of the eyes, and a lividity in the *whites* of them, are amongſt the ſigns of pregnancy. Theſe, however, are not the ſigns of a *plethora*; for in a plethora the eyes rather

ther protuberate, and the veſſels in the *adnata* appear red. In many pregnant women, the face is pale and contracted. See Aph. 106.

Nauſea, vomiting, loſs of appetite.] Theſe are ſo common to pregnant women, that moſt of them hardly ever do any thing to procure relief, knowing that as their pregnancy goes on, theſe complaints gradually wear off, and at length entirely ceaſe; for they rarely continue beyond the third month. However, if theſe ſymptoms continue too long, the functions of the chylopoietic *viſcera* are ſo injured, that the patient loaths every ſort of meats and drinks, and a quantity of depraved humours are collected in the ſtomach and *primæ viæ*, which muſt be expelled, eſpecially, if theſe be attended with nidorous eructations, a bitter taſte in the mouth, and a foul tongue. A gentle purge of rhubarb is, in this caſe, the moſt proper remedy; for all ſtronger purges are to be avoided.—But when the nauſea is perpetual, and ready to affect the whole nervous ſyſtem, it may be very effectually ſtilled by a few drops of Tinct. Thebaica.

Or one totally depraved.] A great many caſes of the depraved appetite of pregnant women are to be met with in medical hiſtory. *Tulpius* ſays he ſaw a woman who, during her pregnancy, eat fourteen hundred herrings, without any offence to her ſtomach, or prejudice to her health.

Faintings.] Theſe frequently happen to women of a tender and delicate *make*. Sometimes they come after violent *nauſeas*, but ſoon go off upon the application of ſcented vinegar, fragrant wine, or ſome gentle aromatic to the noſtrils. See Aph 1300.—Sometimes there is a ſlight fainting from the violent ſtruggling of the child in the womb, and alſo from kneeling too long. Beſides, a preſſure of the turgid *uterus* upon the iliac veins, may hinder the return of the blood towards the heart, by which the ſtrength of

the heart is conſiderably weakened, whence a fainting till a free circulation is reſtored.

Vertigos.] From a vertigo, all the more dangerous diſorders of the head uſually begin. It frequently precedes and accompanies a fainting, and moſt frequently a *nauſea*, even in perſons who were in the beſt ſtate of health a little before. It is alſo frequently the conſequence of a *plethora* when the veſſels of the brain are full and diſtended, which is commonly the cauſe aſſigned in women with child, and may ſometimes, though not always, be the real one; ſeeing the ſame cauſes which produce fainting, a nauſea, and vomiting, cauſe likewiſe a vertigo, and therefore require the ſame method of cure.

Intenſe pains of the ſtomach.] As an acid acrimony ſo often produces pains in the ſtomach and bowels from the ſame cauſe, the like diſorders may happen to women with child, if they indulge in the uſe of meat and drink, which are either acid, or quickly become ſo. The abſorbent earths effectually remove theſe complaints.

Pubes, groin, &c.] If the change of the ſituation of the abdominal viſcera from the turgid uterus be conſidered, it will not appear ſtrange that various pains ſhould ariſe from a compreſſion of ſo many different parts; eſpecially if there ſhould be any adheſion of the abdominal viſcera among themſelves, or to the adjacent parts.

Breaſts.] From that remarkable conſent there is between the uterus and the breaſts. Fomentations of milk and water, mixed with a little Venetian ſoap, remove theſe complaints; but *Mauriceau* adviſes us to leave this to nature.

A torpor and ſenſe of weight.] The uneaſy, though dear load, weighs down the whole body, and renders women ſometimes ſo weak, that in the laſt months of geſtation they can hardly move a joint, eſpecially if they have been delicately bred up, and indulge their eaſe the whole time of their pregnancy.

Difficulty of breathing.] This is chiefly moſt troubleſome towards the end of geſtation, when the abdomen is ſo diſtended, that the diaphragma has not room to diſtend, nor the abdominal muſcles to act with any degree of force.

Abortions.] Which may happen from various other cauſes.

APH. MCCXCVII.

WHICH, as far as they depend upon one cauſe, are uſually removed by the ſame remedy, namely, by bleeding.

From what has been ſaid, I may conclude, that bleeding in every woman with child is not neceſſary, nay, nor always proper, and that it ſometimes does harm. However, I am far from thinking that a vein ought never to be opened. To thoſe women who have large quantities of the *menſes* when they are not pregnant, who live luxuriouſly, and uſe but little exerciſe, I never heſitate to adviſe bleeding. I only mean to inculcate, that it ought not to be held a general rule to bleed in the time of pregnancy, and that all the bad conſequences which ſometimes attend pregnant women, are to be attributed to a neglect of this remedy. In the mean time it is the opinion of the beſt phyſicians, that we ought to proceed in this matter with great caution. *Hippocrates* ſays, "In women with child phlebotomy cauſes abortion, "and that the ſooner, the nearer the fœtus is to "maturity." *Galen* was of the ſame opinion. It muſt, however, be confeſſed, that this aphoriſm of *Hippocrates* is not altogether and abſolutely true, becauſe daily experience ſhews, that abortions do not always happen after bleeding. Whence *Celſus* very judiciouſly fixes the juſt bounds of this opinion of *Hippocrates*; for, in treating of veneſection,

he remarks, that the ancients never bled children, old men, or women with child. "But afterwards "experience proved, that none of theſe rules were "univerſal, and that ſome other circumſtances were "rather to be regarded. For the material point is "not, what the age may be, or what is contained "within the body, but what degree of ſtrength there "is." By following this rule, the phyſician will not eaſily commit a miſtake. For he will not adviſe bleeding to a pregnant woman who looks pale and languid. On the contrary, if ſhe looks red, is hot, and the veins ſwell; if there is an head-ach, a running at the noſe, a tenſion in the loins, pelvis, and groin, he will then bleed to prevent an abortion, which the plenitude of the veſſels ſeem to threaten.

But it ſeems plain from the whole context of *Celſus*, that the diſpute was only, whether in acute diſeaſes it was right to bleed women with child, and not whether bleeding was neceſſary in healthy pregnant women. For *Hippocrates*, in the aphoriſm preceding that above quoted, ſays, "If a woman with "child be ſeized with an acute diſeaſe, it will prove "mortal." That pregnant women are in great danger in acute diſeaſes, is not to be doubted; however, they do not all periſh, as appears from the teſtimony of *Hippocrates* himſelf. For the woman who lived on the ſea-ſhore, was ſeized with an acute fever in the third month of her pregnancy, and immediately complained of pain in her loins. On the third day ſhe had a pain in her neck, head, collar-bone, and ſoon after became ſpeechleſs, delirious, and was convulſed. She had no ſleep. The urine was thin, and of a bad colour. There were other bad ſymptoms, yet ſhe recovered by a bilious vomiting and ſweat on the fourteenth day. Epidemic. lib. i. ægrot. 13.

I have known ſome phyſicians very much afraid of bleeding pregnant women in acute diſeaſes, merely from the authority of theſe aphoriſms, or if they have, it has been too ſparingly, though the diſeaſe required

required plentiful and repeated bleedings. Caſes of this kind may be ſeen in *Foreſtus*, *Stalpart Vander Wiel*, and other practical writers.

APH. MCCXCVIII.

IN the directing of which, however, the greateſt regard muſt be had to place, time, and quantity.

Place.] It is univerſally agreed, that bleeding, during pregnancy, muſt be performed in the arm.

Time.] If an acute inflammatory diſeaſe requires bleeding, a vein may be opened at any time whatever during pregnancy. But to prevent abortion, and to mitigate thoſe troubleſome ſymptoms which uſually attend conception, it is beſt to bleed in the firſt months; for after the third month, the nauſea, vomiting, and all the other ſymptoms of pregnancy leſſen; nay ſometimes entirely ceaſe.

Quantity.] That is ſufficient which leſſens the plenitude, without impairing the ſtrength. When this is obſerved, the patients feel themſelves briſker after bleeding; but if there is too much taken away, they grow languid. *Manningham* has given very judicious rules with regard to bleeding in diſeaſes of women with child.

APH. MCCXCIX.

HERE alſo a thin diet, well-timed exerciſe, and light drinks, are of the greateſt ſervice.

Thin diet.] All the abdominal viſcera, which retain the aliments, and change them into chyle, are moved out of their proper place by the ſwelling *uterus*, and ſometimes, as pregnancy advances, are

greatly compreſſed. In the beginning of conception too, there is often a troubleſome *nauſea*, which greatly diſturbs the action of the ſtomach. For this reaſon the diet ſhould conſiſt of meats that are eaſy to digeſt, broths made of the tender fleſh of young animals, freſh-water fiſhes, new-laid eggs, tender pot-herbs, and well-leavened bread. It is alſo beſt to eat little at a time, and frequently. Fat meat, and eatables prepared of unfermented grain are ſtrictly to be avoided. All high-ſeaſoned meats, hot ſpices, and every thing acrid and ſharp, are highly improper, or at leaſt, ought to be taken ſparingly; for a mild diſpoſition of the mother's humours is of the greateſt conſequence to the tender fœtus. However, in the diet of pregnant women, regard muſt be had to cuſtom; neither are they always to be rigidly oppoſed, even when they deſire eatables that do not appear altogether ſo proper.

Well-timed exerciſe.] Walking is of ſervice, particularly in a pure, ſerene, country air; but not ſo, however, as to fatigue. A carriage, unleſs hung on ſprings, is not ſo ſafe; nor are journies by any means proper for pregnant women, for fear of accidents. Aſcending a ſteep path, as it fatigues, or going down a declivity, as it can hardly be done by big-bellied women without danger of falling, are both carefully to be ſhunned. In like manner, all violent ſtrainings are to be avoided, as lifting up a weight, removing any obſtacle, &c. for by ſuch attempts many women have miſcarried.

Light drinks.] Pure water is a very proper drink to thoſe accuſtomed to it, nor could I ever perceive any hurt from the uſe of ſmall beer. A little wine may be ſafely mixed with the water for common drink. Nor is it unuſual to allow, juſt after dinner, a glaſs of ſome generous ſoft wine, with a little biſcuit, or toaſted bread, eſpecially if the ſtomach be diſordered. This, however, ought to be allowed with ſome caution to women of a warm ſanguine con-

conſtitution. But drink which is very cold, or made cold by ice, if given to women with child, as *Manningham* obſerves, "frequently occaſions a colic, or brings on an abortion."

APH. MCCC.

IN the mean time, aromatic cordials, together with the mildeſt antihyſterics, or even ſome of the gentle ſub-acids, are of the greateſt uſe and efficacy.

Many women are more or leſs languid in the firſt months of their pregnancy. Thoſe whoſe nervous ſyſtem is very ſenſible, and eaſily irritated, are frequently ſeized with hyſteric fits. In this caſe, phyſicians have recommended cinnamon above all other remedies, which by its grateful fragrancy has a power to remove this languor, and to reſtore vigour to the ſolid fibres. Orange and citron peels are alſo of mighty uſe here, are very grateful to the ſtomach, particularly that of oranges. Their juices too, mixed with food, by way of ſeaſoning, reſtore a loſt appetite, and at the ſame time reſiſt putrefaction. Jelly of currants, marmalade of quinces, and barberries, are for the ſame reaſon recommended to pregnant women. There are various formulas of this kind in our author's *Materia Medica*, more or leſs aromatic, ſuited to the different conſtitution of the patient.

To compoſe the hyſteric affections, caſtor, amber, their tinctures, &c. are of great uſe, but they muſt be given in a ſmall doſe, as they are ranked amongſt the emmenagogues,

APH. MCCCI.

FROM the increaſe and bulk of the fœtus ſeem to ariſe the ſame ſymptoms with thoſe enumerated at Aph. 1296, as alſo the difficulty in making water, and going to ſtool, the piles, varices, a ſwelling of the feet, and of the lips of the *uterus*, with a readineſs to fall down.

The gradual increaſe of the ſize of the *uterus* in pregnancy greatly contributes to alleviate all theſe complaints. But it ſometimes happens that the *fundus uteri* does not aſcend in a ſtrait line, but inclines to one ſide or other; if towards the right ſide, it will preſs the bulk of the inteſtines towards the concave part of the liver, where the gall-bladder, biliary ducts, and the trunks of the vena portæ are ſeated: whence a number of diſorders may readily ariſe. Does not *Hippocrates* point out ſomething like this, when he ſays, "In women with child, a pain in the "right hypochondrium is bad?"

Difficulty in making water.] From a preſſure of the gravid *uterus* upon the neck of the bladder, and part of the urine remaining long in the bladder, acquires a degree of acrimony, by which it is continually irritated to diſcharge its contents, and thus a moſt painful ſtrangury is produced, with a frequent micturition.

And going to ſtool.] Coſtiveneſs in pregnant women ariſes likewiſe from a preſſure of the *uterus* upon the *rectum*. Great care ought to be taken that the fæces do not harden in the *rectum* of pregnant women; as it is not, without the greateſt difficulty, that they can afterwards be expelled by the *anus*. Abortions have ſometimes happened from this cauſe alone.

Piles,

Piles, varices.] Both theſe diſorders ariſe from the ſame cauſe, namely, a preſſure of the gravid *uterus* upon the *iliac* veins, by which the return of the venous blood from the parts below is retarded. This cauſe is conſiderably increaſed from indurated fæces collected about the end of the *colon*.

Varicous ſwellings are not always without danger; for ſometimes the veins, by being long ſtretched, loſe at laſt their ſtrength, and burſting, produce a very dangerous hæmorrhage. Beſides, the blood by long ſtagnation may become acrid, erode the coats of the veins, and occaſion a kind of ulcer very difficult to heal. But generally, after delivery, theſe ſwellings go off, unleſs the veſſels have been ſo much diſtended as to loſe all their contractile power. In this caſe, a lying poſture is neceſſary, with gentle friction in the morning, afterwards applying a bandage upon the ſwelled veins, to ſupport and ſtrengthen the ſwelled veſſels. The lower parts are firſt to be bound with the bandage, which ought to be ſufficiently broad, that the preſſure may be more equal.

A readineſs to fall down.] The belly in women with child naturally inclines forwards, and the more the nearer they are to their delivery; therefore they are obliged to walk with the trunk of their bodies bent backward, in order to preſerve the center of gravity. However, upon ſtriking their foot againſt the leaſt obſtacle, they fall directly forwards.

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APH. MCCCII.

THESE diſorders may ſometimes be relieved by bleeding, or by changing the ſituation of the body, at times; and alſo by bandages, and ſuch like contrivances; and, laſtly, by ſoftening liniments.

We

We are now to conſider, by what means the ſymptoms enumerated in the preceding aphoriſm may be, if not removed, conſiderably alleviated. For the fœtus ought to increaſe, the *uterus* to enlarge, and its veſſels to be filled with blood. In this caſe, bleeding is recommended as a remedy, which, if not always, is at leaſt ſometimes, of ſervice. But as a great part of the blood in pregnant women is collected about the *uterus*, the reſt of the veſſels of the body are deprived of their uſual proportion of blood; for which reaſon they often look pale, and without any blood in the face. Would it be proper, in this ſtate, to leſſen the quantity of blood by veneſection? One can hardly think ſo; for we are not treating here of plethoric women, nor of women with child labouring under any acute inflammatory diſeaſe, which neceſſarily requires bleeding. In plethoric women, where the face is turgid and red, the veſſels diſtended, and the pulſe full to the touch; no one can doubt but the letting of blood muſt prove of the greateſt ſervice, eſpecially if theſe ſymptoms happen near the time of delivery; for then, by the violent efforts of labour, the blood may be forcibly thrown into the veſſels of the *encephalon*, and all its functions thereby ſuppreſſed; or even a fatal apoplexy may enſue from a rupture of the veſſels; convulſions too may often follow, or a very dangerous hemoptöe, from a burſting of the pulmonary veſſels: I have myſelf ſeen ſuch unfortunate accidents happen. I am ſtill, however, of opinion, that in a woman of good health, mere pregnancy does not require veneſection. Conception, the growth of the fœtus, and enlargement of the *uterus*, delivery itſelf are all the work of nature alone, which a phyſician ought never raſhly to diſturb. *Mauriceau*, *La Motte*, and the greateſt maſters in the art of midwifery have given the ſame admonitions.

By changing the ſituation of, &c.] In order to leſſen the preſſure of the *uterus* upon the *iliac* veins, and

and to forward the return of the blood retained in the varicous veins.

If the piles are very painful, they are to be fomented with the moſt emollient remedies. The ſteams of emollient plants boiled in milk and water are frequently of ſervice, and afterwards the application of ſome ſoft liniment, forms of which are given in the *Materia Medica*.—But if they be greatly ſwelled towards the end of geſtation, it would be proper to open them with a lancet; but as the piles generally go down of themſelves after delivery, they ought not to be opened, unleſs there is room to fear, that from their bulk the delivery may be retarded.

APH. MCCCIII.

BUT a flooding is reckoned one of the moſt dangerous diſorders incident to women with child.

A flooding is always to be ſuſpected, though it is not always equally dangerous; but if it be ſudden, and in a full ſtream, it is juſtly reckoned a moſt dangerous diſorder, often fatal both to the mother and the child. When it happens in the laſt weeks of geſtation, it is then highly dangerous; whence the following practical maxim, "the nearer a woman is "to her delivery, the more dangerous a flooding." *Puzos*, an eminent man-midwife, affirms, that he ſeldom obſerved any one carried off by a flooding before the fourth or fifth month of pregnancy, unleſs it was attended with ſome other dangerous diſeaſe, or wanted the neceſſary aſſiſtance of art. But he feared more fatal conſequences from flooding in the ſeventh, eighth, or ninth months; for though the hæmorrhage may not be ſo violent as in other abortions, yet many die after delivery.

However,

However, floodings, even in the firſt months, are not altogether free from danger; for ſometimes they return again in a few days, if either the ſecundines or grumous blood remain in the uterus, after the excluſion of the fœtus. A caſe of this kind is related in the Academ. de Chyrurg. vol. i. p. 360.

The placenta of an abortive is more difficult to bring away than that of a fœtus come to full maturity, becauſe the umbilical cord is very tender, and more liable to break with the ſmalleſt force, and in younger fœtuſes, the placenta is proportionally larger, and adheres to the *uterus* with a larger ſurface.

Mauriceau obſerves, that women with child are more particularly in danger, when they miſcarry in continual fevers of the remitting kind, and moſt of all, when the breaſt is affected. Many he ſaw, with the utmoſt concern, die in this manner, very ſoon after abortion. But if pregnant women ſhould eſcape all the dangers of flooding, it is to be feared that they may fall into very bad chronic diſorders, as a cachexy, dropſy, and many others. I ſaw a woman, after a violent flooding, ſeized with frequent and long-continued ſyncopes, and though ſhe eſcaped, yet ſhe could never riſe from bed, without being immediately ſeized with a violent palpitation of the heart, attended with the greateſt anxiety. For twelve years, this unhappy woman was confined to her bed, and, provided ſhe lay ſtill, was otherwiſe in tolerable good health. It is probable, that in theſe long and frequent faintings, the blood ſtagnated in the heart and larger veſſels, had formed polypous concretions, which ſtopped the return of the venous blood, ſuddenly accelerated by the motion of the body. From all which, it is evident, that a flooding is one of the moſt dangerous diſorders that can happen to pregnant women.

APH.

APH. MCCCIV.

A Flooding generally ariſes from a ſeparation of the *placenta* from the *uterus*, whilſt the arteries are full of blood, and the uterus diſtended, ſo that the arterial blood frequently flows out in a full ſtream.

APH. MCCCV.

THIS is known to be the caſe when the *os uteri* is open, when the blood flows in a large and rapid ſtream, greatly impairing the ſtrength, and occaſioning a great deal of pain, whether it comes away freſh, or in clots.

APH. MCCCVI.

FLOODINGS may ariſe from violent paſſions of the mind; from violent exerciſe; from the injudicious uſe of hyſteric and emmenagogue medicines; and from blows on the lower part of the abdomen.

Violent paſſions of the mind.] We have already often taken notice of the ſurpriſing and ſudden changes produced in the body by violent affections and paſſions of the mind. It will therefore be ſufficient to obſerve here, that by ſudden fear all the veſſels of the body are contracted: by anger all the humours are rarified, and the veſſels become full and turgid. The Spartan mother, through exceſs of joy, on ſeeing her ſon, whom ſhe had imagined to be killed in the field

field of battle, expired in his filial embraces. Whoever then conſiders how ſudden emotions may affect the tender veſſels which connect the *chorion* and *placenta* to the *uterus*, need not wonder why women with child ſhould be ſeized with floodings from violent affections of the mind. I knew a woman with child, who ſlept quietly all the time there was a dangerous fire in the neighbourhood. Her officious mother coming up early in the morning, to congratulate her daughter on ſleeping ſo ſound, and eſcaping the terror ſhe muſt have been in, the woman, on hearing it, was ſeized with a trembling all over her body; which was quickly followed with a flooding, faintings, and convulſions. However, ſhe recovered from this dangerous uterine hæmorrhage, but ſhe loſt the fœtus, which was four months old, by abortion.

From violent exerciſe.] This is a frequent cauſe of uterine hæmorrhages, and of abortion, which pregnant women may eaſily prevent if they pleaſe.

Injudicious uſe of hyſteric and, &c.] The milder antihyſterical remedies, and gentle cardiacs are of ſervice to pregnant women, and were recommended at Aph. 1300. Here thoſe only are condemned, which, from their effects, are called *emmenagogues*, are of an acrid nature, and ſtimulate either the *uterus* itſelf, or the parts adjoining thereto into violent contractions, whence uterine hæmorrhages often ariſe.

From blows, &c.] For the turgid *uterus* and the fœtus occupy the anterior part of the abdomen. A blow inflicted there may not only deſtroy the connection of the *chorion* and *placenta* with the uterus, but even ſplit the *uterus* itſelf. This is the reaſon why a fall is always ſo very dangerous to pregnant women, if they fall forwards; for then they are ſure to ſtrike the prominent part of their bellies againſt the ground. Whence, in the Moſaic law, a very ſevere puniſhment was decreed againſt the per-

ſon

ſon who ſhould ſtrike a woman with child in the belly.

But the peculiar diſpoſition of the *uterus* itſelf may likewiſe be the cauſe of a flooding and abortion, even from the ſlighteſt cauſes, while the patient appears healthy in all other reſpects. There are, beſides, cauſes of uterine hæmorrhages, which are owing to the fœtus; but theſe can neither be certainly known, nor, if they were, could they be either removed or prevented, ſuch as an unuſual ſhortneſs of the *funis umbilicalis*, or its being twiſted round the neck, or limbs: for then there is danger, leſt, by the motion of the fœtus, the *placenta* ſhould be ſeparated from the uterus. *Mauriceau*, and others of eminent ſkill in the art of midwifery, have given us caſes of this kind. We come now to conſider the means requiſite for the cure of uterine hæmorrhages.

APH. MCCCVII.

THE means are, reſt of body and quiet of mind, a moderately cool air, bleeding, aſtringents, and opiates.

Reſt of body, &c.] In this particular all phyſicians unanimouſly agree.

A moderately cool air.] From the great loſs of blood, the patient frequently turns pale and cold, and then the flooding leſſens, or ſometimes entirely ſtops; but as ſoon as the body grows warm by the heat of the bed, the hæmorrhage immediately begins to break out. For the only hope is, that while there is life, the open orifices of the veſſels may contract, or be cloſed up by grumous blood. For the ſame reaſon, cordials are not to be given, however weak the patient may be, and afraid of faintings;

or, if any ſhould be given, they ought to be of the the gentleſt ſort, and no way ſpirituous. The fragrance of a *citron*, the ſmell of *balm*, the flowers of the *lime-tree*, *roſes*, and ſuch like, or of the ſimple waters diſtilled from theſe, will be ſufficient. *Hippocrates* and *Moſchion* have given us the method of cure uſed by the ancients.

Bleeding.] When the connexion of the placenta is once diſſolved, and the blood flows from the *uterus* in a full ſtream, bleeding can hardly be adminiſtered with ſafety; for leſſening the quantity of blood, will not hinder what remains from eſcaping through the open orifices of the uterine veſſels, and therefore, by emptying the veſſels ſtill more, convulſions and death would ſooner follow. But bleeding is of great uſe in preventing a flooding from a fall; and alſo when few veſſels only are hurt, and the blood flows from the *uterus* in a ſmall quantity, and thus the hæmorrhage is ſometimes kept from increaſing, and an abortion prevented.

Aſtringents.] See what has been ſaid of aſtringents when we treated of an hæmoptöe; as all that has been remarked there, may alſo be properly applied to the uterine hæmorrhage.

Peſſaries made of aſtringent remedies have been recommended by phyſicians; but as theſe only lie in the *vagina*, no great benefit can be expected from them. For when the *vagina* is blocked up by peſſaries, the blood not flowing out with freedom, coagulates, not only in the vagina, but alſo in the orifice of the uterus itſelf; and although ſome check may be given to the hæmorrhage; yet as the open veſſels are ſtill pouring out their blood, that which is collected between the *chorion* and ſurface of the *uterus*, ſeparates that membrane more and more from the *uterus*, and conſequently will rupture a greater number of veſſels; hence, when the clots of blood, which choaked up the *os uteri*, come to be expelled, the hæmorrhage returns with more violence than ever.

ever. Add to this, that the grumous blood which ſticks in the orifice, will irritate the *uterus*, and may excite labour-pains, which would certainly endanger the life of the fœtus. However, if any one has a mind ſtill to try the uſe of peſſaries, it ſeems adviſeable to keep from all acrid ſtyptics, leſt the *os uteri*, which is very ſenſible, ſhould be injured or irritated.

Opiates.] More good may be expected from opiates, which have a power of retarding the circulatory motion of the blood, as appears from the experiments made by the ingenious Dr. *Alſton*. See Med. Eſſays and Obſervat. tom. v. pag. 153.

Ligatures alſo on the limbs are found beneficial, but they muſt be ſuch which compreſs the veins only, and retain the blood in theſe veſſels, for the arteries ought not to be compreſſed by any means. When the hæmorrhage from the *uterus* begins to leſſen, all the ligatures are not to be united at once, but one after another, leſt the blood collected in the limbs ſhould return too faſt to the heart, or even be irritated into frequent and violent contractions; whence an increaſe of the hæmorrhage. In the mean time, the exhauſted veſſels are to be recruited with ſmall quantities of veal broth, given frequently and moderately cool.

APH. MCCCVIII.

IF by theſe means no advantage be gained, the infant is to be forthwith extracted, in the moſt ſkilful manner, and the *uterus* freed from the *fœtus*, *placenta*, and grumous blood, as ſoon as poſſible.

As the moſt dangerous conſequences are to be apprehended from floodings, the moſt ſkilful maſters

in the art of midwifery have placed their only hopes of ſafety in freeing the cavity of the *uterus* of its contents as ſpeedily as poſſible. *Mauriceau* ſays, that when the flooding is violent, there is need of the utmoſt diſpatch, and orders the operator to lay hold of the child's feet with his hand, and bring it away in that manner. *Deventer* is of the ſame opinion, whether the flooding happens before or after the ſeventh month. But this cannot be done without dilating the *os uteri*, which ſometimes is not to be accompliſhed without uſing conſiderable force and violence; hence often a dangerous inflammation of the *uterus* follows.

For this reaſon ſome have been of opinion, that the fœtus ought by no means to be brought away, unleſs it can be done without a violent dilatation of the *os uteri*, and that then only it was of real benefit when it was ſo far open as to admit with eaſe the operator's fingers. This is the opinion of the ingenious Mr. *Peu*, who relates a caſe, where, after the fœtus was brought away, the hæmorrhage did not leſſen, but on the contrary increaſed, till the poor woman at laſt expired. Nay, *Levret*, of great reputation in the art of midwifery, maintained, that a pregnant woman was not even to be examined by the touch in an uterine hæmorrhage, if the labour-pains were not begun, or the uſual term of reckoning near. But if a profuſe hæmorrhage from the *uterus* happened in the very time of labour, then he adviſes to break through the membranes; for when the waters are once evacuated, the *uterus* will have time to contract itſelf, and thus the hæmorrhage will be leſſened.

Puzos, juſtly celebrated for his ſkill in this art, prudently followed a middle courſe. For when he ſaw that the bringing away the fœtus by a violent dilatation of the *os uteri* was always attended with ſo much danger, even though it was frequently done in a very ſhort time; and obſerving at the ſame time, that floodings

floodings happening at the uſual time of delivery, were greatly leſſened upon the increaſe of labour-pains; he thence concluded, that theſe pains were to be increaſed, or excited if they were not as yet come on. He acknowledges, that the excluſion of the fœtus is not only conducive, but even ſometimes abſolutely neceſſary, to ſuppreſs the hæmorrhages; but thinks, that this ought to be done in a method that comes neareſt to the natural delivery. It is evident from obſervation and practice, that the natural delivery may be haſtened by gently and gradually dilating the *os uteri* with the fingers, in the ſame manner almoſt as it is dilated by the ſtrong efforts of the woman in natural labour. In a flooding, the *os uteri* is more or leſs open, and is moiſtened by the warm blood which comes away. Sometimes it is rendered more open by clots of blood preſſed through it; from whence alſo, ſlight pains ariſe, but too feeble to have any effect. Efforts muſt therefore be made to quicken them, by gently and gradually dilating the *os uteri*, by which the pains are increaſed, the membranes become turgid, which are now to be broken, that the *uterus* may have more room to contract.

But ſhould the *os uteri* be forcibly dilated, there is great reaſon to fear an inflammation, from which indeed very few women recover.

APH. MCCCIX.

NOR is it of any importance at what time of geſtation this ſhall happen, ſince it is more eligible that the fœtus ſhould periſh, which even otherwiſe has no chance for its life, in order to ſave the mother, than that both ſhould be infallibly loſt.

Of Difficult Deliveries.

APH. MCCCX.

A Delivery is difficult, either from a defect of the mother, or of the child.

No delivery, properly ſpeaking, can be called abſolutely *eaſy*, ſince God pronounced this ſentence againſt *Eve* for her tranſgreſſion: "I will greatly multiply "thy ſorrow and thy conception: in ſorrow ſhalt "thou bring forth children."

APH. MCCCXI.

FROM a defect in the mother, when ſhe wants ſtrength to expel the *fœtus*, or from a defect in the natural parts themſelves.

As the head of a man is larger, in proportion to the reſt of the body, than that of other animals, a woman is delivered with greater difficulty than any other animal, and therefore requires a due degree of ſtrength to protrude the child. It is commonly believed, that a robuſt fœtus aſſiſts the mother's efforts by its own; but if all particulars are duly weighed, it will be evident, that the fœtus can give but little aſſiſtance upon this occaſion. He who has but once ſeen a woman in labour, cannot be ignorant what efforts, what force, ſhe exerts, whilſt the fœtus comes into the world.—She holds her breath; almoſt all the muſcles of her body are ſtiff; ſhe fixes her feet on ſome firm prop, and with her hands eagerly

catches

catches at the by-ſtanders, or whatever comes in her way; her face is red, ſwelled, and bloated; in a word, the whole ſtrength of her body is at once exerted to protrude the fœtus, which at time of delivery ſeems to be totally paſſive; and if it was active, the little ſtrength of its tender body could not aſſiſt the efforts of the mother. I know that *Harvey* was of a different opinion, and maintained that the birth of viviparous animals was chiefly owing to the efforts of the fœtus. But it is otherwiſe in the birth of man, which requires all the efforts of the mother; by theſe the labour is completed; and of theſe there would be little occaſion, if the fœtus could force its way into the world by its own endeavours. Hence it is plain, that difficult deliveries may be owing to the want of ſtrength in the mother: but if the parts are preternaturally formed, no one can doubt but that the delivery muſt be difficult.

APH. MCCCXII.

IF the ſtrength fails, it ſhould be raiſed by uterine, cardiac, and ſternutatory medicines.

It very rarely happens that the weakneſs of the woman in labour renders delivery difficult. Phyſicians therefore ſhould take care not to hurt their patients by preſcribing cordials; for if they are given too often, or too plentifully at the time of delivery, either to raiſe the ſtrength, or haſten delivery, they will continue to operate afterwards, and may prove the cauſe of great miſchief. The celebrated *Boerhaave*, ſpeaking of the virtues of oil of cinnamon, ſays, that he never knew any remedy equal to cinnamon for ſupporting the ſtrength of pregnant women, and women in labour, when there

is no inflammation, nor veſſels broken. But while the placenta is ſeparated from the *uterus*, the veſſels are open, and pour out their blood in large quantities. In this ſtate, what ſervice can be expected from warm ſtimulating cordials? For though at the beginning of labour the patient is not in ſuch a ſtate, ſhe quickly will be ſo, and that in the moſt legitimate and natural delivery. The woman in labour, and thoſe who are about her, generally wiſh to haſten delivery. But in women who lie-in for the firſt time, a ſpeedy delivery is not always the ſafeſt: on the contrary, a ſlow one is to be preferred, that the parts may yield by degrees, and not be all at once violently diſtended. *Mauriceau*, in caſes of this kind, rather adviſes to encourage the patient by ſpeaking kindly to her, and to raiſe her depreſſed ſpirits with broth, or a little wine and toaſted bread.

But women in child-birth often languiſh, either from the tediouſneſs of their labour, or, which is more frequent, from a dread of pain, and the doubtful event. Whence an hyſterical anxiety ariſes, eſpecially in thoſe of delicate conſtitutions; here uterine or antihyſteric remedies are proper, ſuch as tinct. ſuccin. or caſtor. in elder-flower-water, roſe-water, balm, &c. and given by a ſpoonful at a time, till the patient recovers her ſpirits.

If a great and ſudden weakneſs ſhould ariſe, and the pains at the ſame time ceaſe, imminent danger is at hand; for in this caſe, as *Manningham* obſerves, "a fatal extravaſation is to be dreaded," while the blood either flows from the *uterus* in a full ſtream, or is poured into the abdomen, the uterus being now ruptured. — It is ſelf-evident, that in this ſituation warm cordials would increaſe the hæmorrhage, and haſten the death of the patient.

Hippocrates has obſerved, "that ſneezing happening to a woman in hyſteric fits, or in difficult labour, is beneficial." *Harvey* has given us the caſe of a young woman in hard labour, whoſe delivery

livery was greatly promoted by a ſtrong ſternutatory thruſt into the noſe. But if the countenance be red, the eyes ſwelled and turgid, and the head hot, ſome blood ſhould be taken away before ſternutatories are to be uſed, leſt, by the violent concuſſions which they excite, a rupture of the veſſels of the head ſhould follow, and a fatal apoplexy.

APH. MCCCXIII.

IF the internal orifice of the *uterus* is too narrow, or too hard, it is to be helped as much as poſſible, by liniments and fomentations, to render it ſoft and ſmooth.

APH. MCCCXIV.

IF a tumour formed either in the internal neck of the *uterus*, or in the vagina, ſhould hinder the expulſion of the fœtus, it is to be diſcuſſed, or ſuppurated, or removed by a chirurgical operation.

There are other cauſes which obſtruct the eaſy excluſion of the fœtus, of which we ſhall now treat. As the uterus is placed between the urinary *bladder* and the *rectum*, whatever compreſſes theſe parts, muſt at the ſame time obſtruct the eaſy delivery of the child, ſuch as fæces collected in the larger inteſtines, eſpecially in the *rectum*, and the bladder diſtended with urine. Therefore, when the pains of delivery begin, a clyſter is particularly ſerviceable to empty the *rectum*; for if this be deferred till the head of the child deſcends lower, the *rectum* is ſo compreſſed, that a clyſter cannot eaſily be given; nor

nor the fæces eaſily evacuated. Clyſters have another advantage; for by the efforts made to evacuate the belly by ſtool, the pains of labour are haſtened.

But great care ſhould be taken that the bladder be not diſtended with urine, as it may be ſo injured as to occaſion an involuntary emiſſion of the urine. Nay, the bladder, when full of urine, has been broken by the violent efforts of a woman in labour.

When tumours grow either in the orifice of the *uterus*, or near it, or in the vagina, it is ſelf-evident that all theſe obſtacles ought to be removed, if poſſible, before the time of delivery, that the paſſages may be entirely free.

APH. MCCCXV.

IF the excoriated lips of theſe parts ſhould coaleſce, they are without delay, and before delivery, if poſſible, to be divided, and cicatrized.

APH. MCCCXVI.

IF a too cloſe union of the bones ſhall hinder the excluſion of the fœtus, the neck of the *uterus*, and the vagina, are to be ſoftened and lubricated with emollient liniments and fomentations; then the woman is to be aſſiſted by the midwife, according to the rules of art.

Deliveries are rendered more difficult from this cauſe than from any other, as it ſcarce admits of a cure.

APH.

APH MCCCXVII.

A Difficult delivery alſo happens from a fault in the infant; as when it is immoveable, dead, or placed in ſuch a manner as to ſhut up its own paſſage.

The unnatural ſituation of the fœtus is often the cauſe of difficult deliveries.

APH. MCCCXVIII.

THE infant is known to be dead, if it be without motion; if the umbilical arteries have no pulſe, eſpecially in that part neareſt to the body of the infant; if any thing fetid be diſcharged from the *uterus*; if the patient feels a great weight; if there be a teneſmus; if ſhe falls into a ſyncope; if her breath be very offenſive; the ſkin livid; if ſhe is not delivered long after the waters are broke; if the epidermis of the infant eaſily ſeparates from the ſkin; and the ſkin flaccid, and readily ſeparated; if the bones be ſoft, and eaſily moved.

If it be without motion.] Though it is certain that the fœtus moves in the womb, yet this motion is very different not only in different women, but even in the ſame woman. I have known many who have thought that they would be delivered of a dead child, or at leaſt of a very weak one, when they could ſcarce feel its motion, and yet a ſtrong vigorous child was born. Women are often alarmed, when at the time of delivery, they do not feel the motion

motion of the child; but in a difficult delivery, when the waters break, the womb often contracts, and keeps the body of the child ſo immoveable, that ſcarce any motion can be perceived. The child, by being thus confined, is rendered dull and heavy, or may be ſeized with a fainting fit; whence it is evident that the ſymptom alone is doubtful.

If the umbilical arteries have, &c.] In a natural labour the navel-ſtring cannot be touched, ſo that this ſymptom can only take place when the navel-ſtring comes out together with the head, or ſome limb of the fœtus, or even when it ſlips out alone, which generally happens while the child lies in a tranſverſe poſture. Then if no pulſation is found in the umbilical arteries, it may be juſtly concluded, that the child is in imminent danger; yet its death cannot be inferred with certainty, even from this ſymptom, as the fœtus may languiſh, and yet afterwards revive.

If any thing fetid be diſcharged from, &c.] Fetid diſcharges ſhew that a corruption is begun, and is therefore a bad ſign, but it does not always prove the fœtus to be dead; for they may ariſe from other cauſes. *Manningham* has well obſerved, "that all "fetid diſcharges from the *uterus* do not always in-"dicate the fœtus to be dead, as they may ariſe "from clotted blood too long retained." The like kind of diſcharges happen after delivery from grumous blood lodged either in the *uterus* or vagina.

If the patient feels a great weight.] This ſymptom does not appear till ſometime after the child has been dead. However, if the fœtus gets into the cavity of the *pelvis*, and dies while it is ſticking there, it is evident, that this ſymptom cannot then take place.

If there be a teneſmus.] A teneſmus does not always happen; but the patient faints, looks pale, the lips in particular are of a livid hue; the eyes look ſad, and loſe their brightneſs.

If

If ſhe is not delivered, &c.] In this caſe the fœtus is ſtrongly compreſſed by the contracted *uterus*, whereas it before ſwam in the liquor of the *amnion*, and was free from all preſſure. It is then univerſally agreed that the fœtus is in danger of death; but this ſymptom is by no means infallible, as many obſervations prove, that the fœtus has ſtuck for many days in this dangerous ſituation, and yet born alive at laſt.

If the epidermis of the, &c.] When the epidermis ſeparates from the ſkin, it is a ſign that the parts under it are beginning to mortify. Hence the ſymptom is of great conſequence. See Aph. 427, & ſeq.

The ſkin flaccid, &c.] For this ſhews a complete mortification of the parts.

If the bones be ſoft, and eaſily moved.] This is to be underſtood of the bones of the head; for the ſkull of a child juſt born is in part nothing but a membrane. While this membranous part is ſtretched by the encephalon, the head reſiſts; but when the parts ſink after death, the membranes ſubſide, and the bony parts of the ſkull move to and fro, and eaſily approach each other. This is looked upon as a bad ſymptom.

It is evident, that all theſe ſymptoms are not certain proofs of a dead *fœtus*, great caution is therefore required, leſt a living *fœtus* ſhould be treated as a dead one.

APH. MCCCXIX.

AS ſoon as it is certain that the fœtus is dead, it is to be extracted by the feet, if poſſible, leſt the mother ſhould be ſeized with a gangrene, a ſyncope, or death.

APH.

APH. MCCCXX.

THE poſition of the infant ſhould be that in which it can be delivered, that is, with the head foremoſt, or rather by the feet.

APH. MCCCXXI.

THIS is done, 1. By putting the mother in a proper ſituation; and, 2. By changing the poſition of the infant.

1. *Levret* well obſerves, that the delivery may be happily effected in almoſt any poſture, if it be natural; wherefore the midwife ſhould not much mind what poſition the woman in labour prefers.

2. The child's poſition is natural when it comes with its head firſt, the face towards the *os ſacrum* of the mother. When it deviates from this natural ſituation, it ſhould be altered, if poſſible; or if the head ſhould be too far diſtant from the orifice of the *uterus*, the feet are to be ſought for, and the child dexterouſly delivered by the feet. This midwives call *turning the child.*

Of

Of the Diseases of Women in Child-bed.

APH. MCCCXXII.

A Lying-in woman is ſeized with weakneſs, a ſyncope, and convulſions immediately after delivery; becauſe the arterial blood is driven from the *cerebrum* and *cerebellum* into the lax veſſels of the abdomen; ſhe is alſo ſeized with after-pains ariſing either from her labour, or a contuſion of the parts, a retenſion of blood, or of the ſecundines, or from another fœtus.

We come now to treat of thoſe diſeaſes which attend child-birth, and which proceed from it as their cauſe. But a woman, during her lying-in, may be ſeized with other diſeaſes, ſuch as thoſe which are epidemical, and others which we ſhall not here treat of. If ſuch ſhould happen, the phyſician ſhould always have in his view the ſtate and condition of the child-bed woman.

To proceed orderly, we muſt conſider thoſe changes which neceſſarily follow when the fœtus and placenta are extracted. Before delivery, the diſtended *uterus* changes the ſituation of the inteſtines, compreſſes all the adjacent parts, hinders the free action of the diaphragma, and extends the muſcles and integuments of the abdomen. After delivery, the pendulous viſcera of the abdomen recover their natural ſituation, the veins ſo often varicous in pregnant women, quickly return to the heart, the blood retained

retained in them, and the arteries now freed from preſſure, more eaſily admit the blood propelled from the heart, which they readily pour into the veins, now likewiſe at liberty. All theſe cauſes concurring, produce faintneſs, and a ſyncope. For almoſt all the blood tends towards the lower veſſels of the body, now lax and open, ſo that but a ſmall quantity comes to the *cerebrum* and the *cerebellum*. For this reaſon the moſt dangerous period of child-bed women, is that which immediately follows delivery; and if the *uterus* did not contract its veſſels, the danger would be ſtill greater. Hence it is that ſkilful midwives do not extract the *placenta*, till it is certain that the *uterus* has contracted itſelf. For if it has not, the child-bed woman floods, and by the ſudden inanition of the veſſels, dies in convulſions.

With after-pains, &c.] From the ſtrong efforts made in labour, by which the woman is greatly fatigued, and ſometimes from a ſeparation of the bones of the pelvis in a difficult labour.—The parts may likewiſe be torn or contuſed; hence inflammations, and all their bad conſequences.

Another fœtus.] Which then requires a freſh labour, that muſt again irritate the parts already in a painful ſtate.

A retention of blood, &c.] Clots of blood often remain in the uterus after the ſeparation of the placenta. Theſe, as they paſs through the *os uteri*, irritate the parts, and are partly the cauſe of thoſe pains which follow after delivery. The like pains may likewiſe be occaſioned from a retention of the ſecundines.

APH. MCCCXXIII.

SWATHING the relaxed abdomen removes the firſt-mentioned complaints (Aph. 1322.) Another fœtus, parts of the ſecundines, and grumes of blood, ſhould be taken out with the hand.

APH. MCCCXXIV.

THE after-pains are removed by opiates, antacids, cardiacs, diluents and anodyne fomentations externally applied.

Opiates.] The uſe of opium in after-pains is not univerſally approved. Some, and thoſe men of great ſkill in midwifery, have condemned opium and all its preparations. But if we conſider thoſe ſymptoms which ariſe immediately after delivery, it will appear evident enough that it ought not to be rejected. In ſpaſmodic contractions of the *uterus*, opium is a moſt efficacious remedy: I have always given it myſelf after delivery, nor did I ever repent of ſo doing, as I can ſolemnly teſtify that I never knew any hurt done by it, However, I always abſtained from compound opiates, as the Theriaca Andromachi, Mithridate and the Philonium, becauſe they contain ſome of the warmer aromatics, which cannot be given here without ſome danger. In the *Materia Medica*, there are forms of opiates neceſſary in this caſe.

APH. MCCCXXV.

WOMEN in child-bed are liable to an immoderate flux of the *lochia*, either from a too great thinneſs, or commotion of the blood, but more frequently from things retained in the *uterus*, which prevent its contraction, ſuch as thoſe enumerated at Aph. 1322.

APH MCCCXXVI.

IF from things retained in the *uterus*, theſe are to be brought away.

APH. MCCCXXVII.

IF from affections of the mind, too great thinneſs, or a too violent commotion of the blood, we muſt have recourſe to preparations of barley, jellies, emulſions, opiates, and aſtringents.

If ſtrong affections of the mind may diſſolve the connection of the placenta with the *uterus*, and occaſion a dangerous hæmorrhage, this is much more to be feared after delivery, when the veſſels are open, or ſo little contracted, that the ſlighteſt cauſe is capable of dilating them again. All emotions of the mind are therefore to be carefully guarded againſt. Child-bed women ſhould not concern themſelves with domeſtic affairs, nor hear either of good or bad news, that the tranquillity of their minds may not be diſturbed.

Too

Too great thinneſs, &c.] Here all remedies which correct humours that are too thin, and check the rapid motion of the blood, are proper.

Mauriceau obſerves, that thick fæces accumulated in the large inteſtines ſometimes occaſion an immoderate flux of the lochia, and gives us the caſe of a lying-in woman, from whom the placenta had been taken in a rough manner, who was immediately relieved by a laxative clyſter, that brought away a large quantity of indurated fæces. He afterwards had recourſe to this method, when he ſuſpected that the large inteſtines were filled with indurated fæces, and always with ſucceſs. If, after this, the *lochia* were ſtill immoderate, he ordered the feather-bed to be taken away, and the patient to be laid on ſtraw, and covered with ſheets only. To her loins he applied a mixture of vinegar and water, and gave her the juice of purſlane to drink. He at the ſame time gave broths and jellies ſparingly, ſo as juſt to ſupport life, that the veſſels might have time to contract.

Sydenham directed an incraſſating diet, and twice or thrice a day ſix ounces of a drink made of an equal portion of red wine and plaintain water boiled to the conſumption of a third part, and ſweetened with ſugar. Thus the ſpirituous part of the wine was evaporated, and the rough aſtringent part retained. I have found good effects from half an ounce of tincture of cinnamon, diluted in ſix ounces of balm-water, or the like, giving a ſpoonful every two hours. This chears and ſtrengthens, and yet does not hurt by increaſing the motion of the blood.

APH. MCCCXXVIII.

THE choice of all theſe, we are taught by the ſymptoms of the diſeaſe, the conſtitution of the patient, and the acuteneſs of the diſorder.

Thus if lumps of clotted blood retained in the *uterus* be the cauſe of the hæmorrhage, theſe are to be carefully taken away. But if it ariſes from a flaccid and feeble conſtitution, recourſe muſt be had to ſtrengthening cardiacs.—If the hæmorrhage ſhould proceed from an inability of the *uterus* to contract itſelf, the moiſt efficacious remedies are to be immediately applied, as the worſt conſequences are quickly to be dreaded. We are now to conſider the ill conſequences which generally attend a retention of the *lochia*.

APH. MCCCXXIX.

WHILE the ſerous milky fluid flows from the contracted veſſels of the *uterus* into the breaſts, there ariſes a ſlight fever, after which the *lochia* are often entirely ſuppreſſed; whence many ſymptoms of the worſt kind ariſe, according as the lochial blood is thrown upon the different viſcera; hence phrenſies, pleuriſies, peripneumonies, quinſies, inflammations of the diaphragm and breaſts; a worſe inflammation of the liver, ſtomach, omentum, meſentery, ſpleen, kidneys, inteſtines; hence ariſe dyſenteries, cholics, the iliac paſſion, apoplexies, palſies, and a great many more diſorders.

As

As ſo many evils follow a ſuppreſſion of the lochia, it will be worth while to conſider thoſe things, which in the courſe of nature, happen to women in child-bed.

As ſoon as the placenta is ſeparated from the womb, a conſiderable quantity of pure blood runs out, and the emptied veſſels contract themſelves, ſo that the hæmorrhage is quickly diminiſhed, and in a few hours after delivery, the redneſs of the blood leſſens, and entirely diſappears on the third, fourth, or fifth day.—But this diminution of the *lochia* is natural, the veſſels of the womb being more and more contracted; yet ſoon after, theſe bloody evacuations return of their own accord, and continue to flow in a greater or leſſer quantity, the whole time of child-bed. But if the *lochia* ſhould ceaſe entirely for ſome hours, it is certainly a very bad ſymptom.

It ſeems probable that the milk fever in lying-in women does not ſolely ariſe from the milk brought into the breaſts, but alſo from pus. For if this purulent matter is not evacuated, but reſorpt and mixed with the fluids, it may fall upon ſome of the viſcera, and produce very dangerous diſorders. *Hippocrates* has pointed out this danger, when he ſays, "White "evacuations in child-bed women, when they are "ſuppreſſed, produce a fever, deafneſs, an acute "pain in the ſides, a delirium, and other bad ſymptoms." Upon the ſecond, oftener on the third, and ſometimes upon the fourth day the milk fever attacks; the ſleep is diſturbed, and attended with troubleſome dreams; and ſometimes the patient lies awake the whole night. The pulſe riſes, and becomes more quick. A coldneſs is felt all along the back-bone, between the ſhoulders, and ſometimes all over the body, which is ſucceeded by heat; the breaſts grow painful and ſwell. The breathing becomes more difficult, the *lochia* are diminiſhed, and the arms are moved with more difficulty. If in theſe

circumſtances the patient has reſt, uſes a ſpare diet, and drinks plenty of diluting liquors, all theſe ſymptoms are abated in twenty-four hours by a copious ſweat all over the body, eſpecially about the cheſt, and the breaſts ſwell with milk.

Milk collected in the breaſts, and repelled into the blood, has afterwards been evacuated by various paſſages; but the moſt natural way is by the veſſels of the *uterus* in the form of the *lochia*. It has been diſcharged with the urine, with the fæces, and ſometimes by ſweat: yet I doubt whether ſweats truly milky have been obſerved in lying-in women.

Levret juſtly feared fatal conſequences, if the *lochia* were ſcanty, and the breaſts did not ſwell at the uſual time, eſpecially if there were the ſlighteſt ſigns of an approaching delirium, or if the ſpeech faltered. Such a milky metaſtaſis is ſometimes collected in the *pelvis*; but this ſeldom happens before the twelfth or fifteenth day after delivery, if there be a milk fever, and the breaſts ſhould ſwell. This eaſy ſeparation of the milk from the blood laſts a long time in women who give ſuck; for the milk was tranſlated to the *pelvis* in a woman a full year after delivery, but a fortnight before ſhe loſt the child, to whom, till then, ſhe gave ſuck. This milky matter afterwards proceeds to the thigh, and diſtends the cellular membrane; at laſt, the ſame ſymptoms are obſerved in the leg and foot, and the pains before felt in the pelvis, are allayed. When this œdematous ſwelling begins to ſubſide, it ceaſes firſt in the thighs, then in the legs and feet.

But practical obſervations ſhew, that this milky metaſtaſis ſometimes ſeizes the different viſcera of the body, and can never be diſſipated any more. That excellent phyſician *Chomel* obſerved the body of a woman ſo ſwelled, that three weeks after delivery, it was almoſt as big as at the latter end of pregnancy. The navel burſting of its own accord, a large quantity of a ſerous milky fluid was diſcharged, of a very

bad ſmell, and of a greyiſh colour. Two months after the burſting of the navel, the patient was perfectly cured. *Chomel* was of opinion, that this metaſtaſis was made within the duplicature of the peritonæum.

Practical obſervations ſhew, that this milky metaſtaſis ſometimes affects the different viſcera. In the winter of 1746, an epidemical diſeaſe reigned amongſt child-bed women. The waters ran from them in their labour, after which the dry and painful *uterus* ſwelled, nor did the *lochia* flow as they ought to have done. The diſorder began with a looſeneſs, a pain in the belly followed, particularly in that part which is taken up by the broad ligaments of the womb: the abdomen was tenſe, the head ached, and ſometimes there was a cough. Upon the third or fourth day after delivery, the breaſts, which then uſually ſwell, grew flaccid, and on the fifth or ſeventh day the patient died. It attacked the poor only, eſpecially thoſe who were delivered in hoſpitals. In the month of February the diſeaſe was ſo dangerous, that ſcarce one in twenty eſcaped. Upon opening the bodies, coagulated milk was found adhering to the external ſurface of the inteſtines, and a milky ſerum ſwimming in the cavity of the abdomen. A like ſerum was found in the cavity of the thorax, and upon cutting the lungs, a ſort of milky but putrid lymph was diſcharged. The ſtomach, inteſtines, and the *uterus* were in a ſtate of inflammation, and in many the *ovaria* were ſuppurated.

May we not conclude from what has been ſaid, that a milky metaſtaſis may produce all the diſorders enumerated in the text, which are commonly attributed to a ſuppreſſion of the *lochia?* Is not the danger likewiſe greater, the more the parts on which it is thrown are neceſſary to life? Thus, when it is thrown into the thighs and legs, there is hopes that the matter may be ſo attenuated by fomentations, frictions, &c. as to be carried off either by ſtool, or

urine, but above all by ſweats. When it is depoſited in the inſide of the ſkull, death quickly follows.

I am not, however, of opinion, that a ſuppreſſion of the *lochia* is attended with no danger at all. For *Hippocrates* has demonſtrated that the worſt fevers ariſe from a retention of the *lochia*, from the hiſtory of the woman who lay-in at the *cold ſpring* in the iſland of *Thaſus*, and from that of her who was delivered of twins with great difficulty in *Cyzicus*. But that ſuppreſſion of the *lochia*, which ariſes from an inflammation of the *uterus*, is moſt of all to be feared, as it is cured with great difficulty, frequently ſuppurates, and ſometimes terminates in a gangrene, which always proves fatal. The ſymptoms of an inflamed *uterus* are judiciouſly collected by *Moſchion*, to which is added from an obſervation of *Cleopatra*'s "a rough and black tongue, as if it had been ſtained "with ink, a pain in the extremities of the fingers, "and the nails."

Dr. *Simſon* has remarked, that the *uterus* in the time of child-bed, is more eaſily irritated than at other times, and that by the ſlighteſt ſtimulus, or paſſion of the mind, it will be ſo conſtringed as inſtantly to ſuppreſs the *lochia*. For this reaſon men ſkilled in midwifery are apprehenſive of danger, if the quickneſs of the pulſe occaſioned from the efforts in labours does not abate in an hour after delivery; for then an acute diſeaſe uſually follows, and an inflammation of the *uterus*, with all its dreadful conſequences, may juſtly be feared.

If the *lochia* are depoſited on the ſeveral viſcera, different diſeaſes muſt ariſe, according to the diverſity of their functions. *Hippocrates* has deſcribed a multitude of theſe diſorders in his firſt book on the Diſeaſes of Women. But all theſe may happen though the pureſt blood flows after delivery, as it may be corrupted in the cavity and ſinuſes of the womb by ſtagnation alone, and the putrid miaſmata ariſing

ariſing from thence may be reſorpt, and afterwards by various metaſtaſes produce the moſt dangerous diſeaſes But the danger will be ſtill greater, if, before delivery, the humours have degenerated much from their healthy ſtate. *Hippocrates* obſerves, that in places where the inhabitants drink ſtanding waters, the women are œdematous, are troubled with white phlegm, and rarely conceive, "nor are they duly "purged after delivery."

APH. MCCCXXX.

ALL theſe diſorders ceaſe ſpontaneouſly, when the cauſe is removed.

For as they all ariſe from a ſuppreſſion of the *lochia*, they will either be leſſened, or totally removed when that evacuation is reſtored, if none of the viſcera be greatly injured by a metaſtaſis of the lochia.

APH. MCCCXXXI.

HENCE are required gentle antacids to correct the acid taint of the ſerum; mild diluents compoſed of barley, oats, almonds, fleſh broths; gentle ſpecific aperients from the milder cardiacs and uterines; topical aperient remedies, clyſters, fomentations, cataplaſms, plaſters, liniments, cupping-glaſſes, peſſaries, and ſuppoſitories.

We come now to ſpeak of the method of treating child-bed women, both to prevent a ſuppreſſion of the *lochia*, and to reſtore them when they are either deficient or ſuppreſſed.

Reſt,

Reſt, both of body and mind, is abſolutely required. For it can ſcarcely be believed how eaſily moved the whole nervous ſyſtem is in lying-in women, eſpecially if they be tender, delicately brought up, and ſubject to hyſteric diſorders. For this reaſon, *Sydenham* adviſed all lyingin-women to keep their beds to the tenth day, if they were of a weakly frame. *Levret* cautions women of a lax habit, and who have led a ſedentary life, not to ſtir from their beds before the twelfth day, for fear of a *prolapſus uteri*.

The urine ſhould not be too long retained in women who have been juſt delivered.—Their food ſhould be ſoft and thin, made from oats, barley, rice, and ſuch like; fleſh broths, not too ſtrong, may be given ſeveral times in a day, but in ſmall quantities at a time. They ſhould abſtain from meat, till the milk fever is over; then fleſh meats may be allowed by degrees.

Their drink likewiſe ſhould be ſoft, thin, and taken in moderate quantities, in order to dilute all the humours, that they may circulate freely. Wine is not to be allowed on the firſt days, except a weakneſs and languor make a certain quantity of it neceſſary. Water is agreeable to thoſe who are uſed to it, as alſo mild emulſions, and infuſions of emollient herbs. I never knew beer, that is ſoft and clear, hurtful to child-bed women, who have been uſed to that liquor; but whatever drink is allowed, it ſhould always be given a little warm, never quite cold; for that generally occaſions gripings, horrors, and a ſuppreſſion of the *lochia*.

As the milky ſerum is now conveyed to the breaſts, and moſt of the drinks and aliments allowed to child-bed women, eſpecially thoſe who are juſt delivered, ſpontaneouſly turn ſour, gentle antacids ſhould be given, ſuch as crab's-eyes, claws, coral, &c.

If the belly ſhould continue bound for ſome days after delivery, a mild clyſter may be ſafely given.

Broth,

Broth, or an emollient decoction, with an ounce or two of oil of ſweet almonds, and the ſame quantity of ſyrup of marſh-mallows, will ſuffice for this purpoſe, the intention being only to lubricate the paſſages, and ſoften the fæces that they may be more eaſily diſcharged. Some, however, are of opinion, that coſtiveneſs is of ſervice to child-bed women, and do not venture to give even a gentle clyſter for the firſt eight or ten days, for fear of cauſing a looſeneſs, which they account always dangerous, and generally fatal to lying-in women.

But we need not always be under any great fear from a few looſe ſtools, nor even from a gentle diarrhæa in lying-in women, if it be not attended with other bad ſymptoms. For a diarrhæa ſometimes ſupplies the want of the *lochia*, and although it is in general thought dangerous, yet it preſerves the lives of many, if their ſtrength be properly ſupported, as *De Haen* has obſerved. I have obſerved the ſame, even when the *lochia* flowed in a moderate quantity. Nor is it to be wondered, that the viſcera now freed from the preſſure of the gravid *uterus* ſhould diſcharge by ſtool all that it retained and accumulated during the time of pregnancy.

But when the lochia are ſuppreſſed, the *uterus* inflamed, and every ſymptom threatens deſtruction; if thin, fetid ſtools are diſcharged, with a great loſs of ſtrength, death is at hand. Hence child-bed women, and thoſe about them, are alarmed at the leaſt appearance of a diarrhæa, and call out to have it immediately ſtopt; and if the phyſician does not comply, his reputation is loſt in caſe the woman ſhould die. *Hippocrates* has given a general practical rule, which I cited at Aph. 11. "If theſe humours are "evacuated, which ought to be carried off, the pa-"tient will be relieved, and eaſily bear the diſcharge; "if not, the contrary effect will follow." Nor does this rule deceive us. For this reaſon, *Levret* has judiciouſly divided the diarrhæa of lying-in women into critical

critical and ſymptomatical. The critical begins generally after the third or fourth day. Yellow or whitiſh fæces are diſcharged, or a mixture of theſe two, which gives great relief, and is not attended either with a ſuppreſſion of the lochia, or of the urine, but only with a diminution of them. The appetite continues, the patient ſleeps, the pulſe is regular, and the abdomen ſoft. The ſymptomatic diarrhæa begins much earlier; ſlimy and blackiſh ſtools are immediately diſcharged, which at laſt become grey and ſerous, and ſometimes purulent and bloody. The lochia are ſuppreſſed, the abdomen ſwells, the ſtrength fails, the appetite is deſtroyed, there is no ſleep, and the urine is voided in ſmall quantities, leaving a lateritious ſediment. The patient is thirſty, feels an inward heat, while the external parts of the body are cold.

The rules of art forbid us to ſtop a critical diarrhæa, neither would it be ſafe to repreſs the ſymptomatical, as the putrid matter would be retained in the body. The indication here is to correct the putrefaction already begun, and to ſupport the ſtrength with the moſt efficacious *antiſeptics*. But if putrid particles, mixed with the humours, ſhould flow through the veſſels, and produce a weakening flux of the belly, it will be more ſafely carried off by urine and ſweat. The mild diluting drinks given to childbed women afford a vehicle both for the urine and ſweat. But ſweats forced out by the heat of a chamber, or by bed-cloaths, or by heating ſudorifics, would be very injurious.

If it ſhould appear from the ſymptoms before enumerated, that the *uterus* is inflamed, all the rules laid down in the hiſtory of an inflammation, and of inflammatory diſorders, are to be obſerved. But in the following aphoriſm, we ſhall conſider when, and how far bleeding is neceſſary in lying-in women.

To reſtore the ſuppreſſed *lochia*, the moſt mild aperient ſpecifics, that are gently cordial and uterine, are

are moſtly recommended; or if the ſtronger are to be given, a ſmall quantity of theſe ſhould be added, and infuſed in a due proportion of water. At the ſame time, the uterine veſſels ſhould be ſo relaxed by fomentations, vapours, &c. as eaſily to yield to the impulſe of the fluids. But the greateſt caution is required in treating of women who are very *irritable*, and ſubject to hyſteric diſorders. *Sydenham* has, with his uſual prudence, adviſed phyſicians not to perſiſt in the uſe of uterines. He once, and only once, preſcribed laudanum, either by itſelf or mixed with uterine remedies, in order to compoſe the diſordered ſpirits. He thought the ſame with regard to clyſters, nor would he have them repeated, if the *lochia* did not flow after one injection, and committed the whole cure to time. I have conſtantly followed this method, nor did I ever repent it.

Manningham ſays, "If upon a ſuppreſſion of the "lochia, the *uterus* ſhould be inflamed, blood is ra-"ther to be taken from the arm than the foot." For the motion of the blood through the lower veſſels being accelerated, the inflamed *uterus* will ſuffer the greater violence.

APH. MCCCXXXII.

BLEEDING ought not eaſily, nor without the moſt urgent neceſſity, to be allowed. *Hoffman*, who was an eye-witneſs of the caſe, has left us an account of the fatal effects of imprudent bleeding in a woman of quality, and of a vigorous conſtitution. A painful ſwelling, cauſed by the rough handling of the midwife, ſeized the *vagina* and the internal neck of the womb, on the ſecond day after delivery; the ſymptoms growing worſe, and the lochia

lochia not flowing as they ought, a fever came on. The King's phyſician being called, bled her in the arm, and in ſeven days, repeated the bleedings ſix times, either in the arm or the foot. At the laſt bleeding, her eyes were ſo obſcured, that ſhe wanted a candle, although it was bright day-light, and ſoon after was ſeized with a fatal ſyncope.—The day following, the body was opened, and in the whole vaſcular ſyſtem there ſcarce remained a few ſpoonfuls of blood.

It is not at all ſurpriſing that the loſs of ſo much blood ſhould prove fatal; but *Sydenham* informs us, that even by one improper bleeding, a lying-in woman loſt her life. *Levret* ſaw many lying-in women periſh, from whom much blood had been taken; nay, there did not even one eſcape, while this was attempted either to prevent or cure a ſuppuration of the womb, or a metaſtaſis of the milk. From all which it is ſufficiently evident, that lying-in women ſhould not be bled, but upon ſome urgent neceſſity.

However, it is here to be obſerved, that we treat in this place only of thoſe diſeaſes of child-bed women, which ariſe from delivery and its conſequences, as their cauſe. For a lying-in woman may be ſeized with another diſeaſe, that requires a peculiar method of cure. *Sydenham* has obſerved, that the fever which ſometimes follows a ſuppreſſion of the *lochia*, either becomes of the ſame kind with, or proceeds from the then reigning epidemic, and then requires the ſame method of cure with thoſe fevers.

APH.

APH. MCCCXXXIII.

NOR are the ſymptoms to be removed by the ſame means, as if they were acute diſorders of a particular kind. (1329.)

This cannot be ſufficiently inculcated, as ſo many errors in practice happen from want of attention to this rule. The *uterus* has great influence over the other parts of the body. Thus, for example, ſometimes there ariſe ſuch violent pains in the head, as have been taken by ignorant practitioners for real inflammations of the *meninges* of the brain. *Peu* gives us the caſe of a young woman, who was, the ſecond day, after delivery, ſeized with a moſt violent head-ach, occaſioned by a very tight roller with which the abdomen was bound. She lay anxious, her eyes ſparkled, the lochia were ſtopt, &c. who would not have thought from theſe ſymptoms, that a phrenſy was approaching? I have ſeen many ſimilar caſes, which convince me, that the various ſymptoms which attend lying-in women, and which often are like thoſe of acute diſeaſes, do not require to be treated like an inflammation.

APH. MCCCXXXIV.

WHEN the milk is carried into the breaſts, it often ſtagnates and coagulates; whence an inflammatory pain, a ſuppuration, a ſcirrhus, and a cancer.

From whatever cauſe the milk ſtagnates in the breaſts, its coagulation is to be feared. A thin ſerum then uſually flows from the nipples, while the breaſt

breaſt remains equally tenſe and painful. When the milk coagulates in the breaſts, an inflammation follows, and all the conſequences of one are to be feared, if it cannot be reſolved.

APH. MCCCXXXV.

IT is known by alternate hot and cold fits, a fever, and the ſymptoms of a beginning inflammation.

APH. MCCCXXXVI.

IT is cured, 1. By mild abſorbents. 2. By the ſofteſt diluents. 3. And by external diſcutients timely applied.

1. As milk turns ſour ſpontaneouſly, and when it ſours thickens, alcaline remedies are in this caſe recommended, concerning which, ſee the *Materia Medica* under the preſent aphoriſm, and what has been ſaid at Aph. 66, relating to the method of correcting an acid acrimony.

2. Theſe anſwer every end. They ſoften, relax, and moiſten all the indurated ſubſtances, and render them more eaſy to be reſolved. In the *Materia Medica* there are ſeveral forms of this kind.

3. If diſcutients are applied in the beginning of inflammations, there is great hope of carrying them off by a gentle reſolution. But it is beſt always to uſe the mildeſt diſcutients, that if the inflammation cannot be diſperſed, a kindly ſuppuration may be promoted. The curious obſervations of *Benevoli* and *Nannoni* ſhew the great uſe of vinegar diluted with water, not only in the beginning of an inflammation of the breaſts, but alſo when it is far advanced. When

When the inflammation is violent, the vinegar is to be the more diluted with water, leſt it ſhould hurt by irritating. But if there appear no ſigns of a reſolution, and the heat, pain, and ſwelling in the breaſts increaſe, with a quick pulſe, the vinegar and water is to be laid aſide, and fomentations of warm water only are to be uſed, as alſo proper ointments and plaſters in order to a ſuppuration, as a mild reſolution is not to be expected in this caſe. *Levret* attempts the cure by very ſoft medicines, by anodynes, and gentle reſolvents externally applied. But when the ſwelled breaſt began to ſoften, he then directed that reſolvents alone ſhould be uſed. He applied a poultice of bread and wine boiled together, ſea-water animated with red wine, urine, alcaline ſalt, and ſal ammoniac diſſolved in water.

I ordered a breaſt ſwelled with ſtagnant milk to be fomented with Venice ſoap diſſolved in milk and water, and to be expoſed to the ſteam of warm water twice or thrice a day. If the pain then ceaſed for a while, I ordered it to be gently rubbed, and there was no occaſion for any thing elſe, if there was any proſpect of reſolving the inflammation. There is in the *Materia Medica* a poultice, partly compoſed of ſoftening ingredients, and partly of aromatics and diſcutients, with the addition of Venice ſoap, which is an effectual remedy when the breaſts are obſtructed with milk, and the inflammation at the ſame time inconſiderable. But when there is great heat, redneſs, and pain, then the moſt emollient remedies are the moſt proper.

APH. MCCCXXXVII.

IF the inflammation is likely to terminate in an abſceſs, it ſhould be ripened, opened, deterged, and healed as ſoon as poſſible, according to the rules laid down in our ſurgery. See Aph. 386, and Aph. 402, & ſeq.

It will, however, be neceſſary here to take notice of ſome peculiarities which have been obſerved in ſuppurations of the breaſts.

The ſubſtance of the breaſts conſiſts partly of the cellular membrane, and partly of glands. From this ſtructure, *Levret* has judiciouſly obſerved, that this membrane alone may be obſtructed, but that moſt commonly both theſe parts are affected at the ſame time. If the cellular membrane only is inflamed, and occaſions an abſceſs, the breaſts ſwell a great deal, but then the ſwelling is uniform and equal, ſo that the convex figure of the breaſt is not altered, unleſs two diſtinct abſceſſes are formed. But generally the intervals between ſuch abſceſſes are burſt at the time of ſuppuration, and two or more of theſe unite to make one impoſtume. Theſe abſceſſes are generally very painful, until the matter is diſcharged, either ſpontaneouſly or by art. Suppurations in the cellular membrane go on faſt enough, but the matter diſcharged is various and unequal. The abſceſs, however, is eaſily deterged, eſpecially if it breaks ſpontaneouſly. But when the glands alone are affected, the ſkin is not tenſe, nor is there pain felt in the breaſt at firſt, but only when the abſceſs is near breaking. The ſuppuration proceeds ſlowly; nor is it affected all at once in the tubercles, but when one breaks, another tubercle becomes painful, ſwells, and ſuppurates. Hence theſe kinds of

ſup-

ſuppurations of the breaſts are ſometimes protracted for months together, and in perſons advanced in years to a much longer time.

Slow ſuppurations of the breaſts are to be promoted by ſuch remedies as quicken motion in the parts, ſuch as the cataplaſm recommended at Aph. 1336, and the embrocations uſed by *Levret*, conſiſting of fixt alcaline ſalt, diluted in a ſufficient quantity of water, with the addition of ſome ſoap. For every method ſhould be taken to diſſolve the whole into pus, and that nothing hard remain in the breaſt, which might turn into a ſcirrhus or a cancer.

I twice ſaw an extraordinary caſe in the ſame woman. Whilſt ſhe was pregnant the right breaſt began to ſwell without pain. In the eighth month the ſwelling was ſo increaſed, that the breaſt reached down to the thigh, and was ſupported by a ſling, otherwiſe ſhe was unable to walk. I could eaſily perceive ſix tubercles in this vaſt breaſt, as large as the fiſt, diſtinct, and eaſily moveable. While the moſt fatal conſequences were apprehended, I was ſurpriſed to ſee, after a happy delivery, the whole ſwelling diminiſh, the tubercles diſſolve, and within the ſpace of two months, the breaſt return nearly to its former bulk, only a little more flaccid than the other. No remedy was applied. In about two years ſhe became pregnant again, the ſame ſymptoms happened, and after delivery, they ended in the ſame manner.

Nannoni has confirmed all this by practical obſervations. For he obſerved, that if an inflammation ſeized only the cellular ſubſtance of the breaſt, and a ſuppuration enſued, the ſecretion of the milk was not thereby diminiſhed; but if the glandular ſubſtance was affected, the ſecretion of the milk was greatly diminiſhed, or ceaſed entirely, in proportion to the obſtruction. He likewiſe obſerved, that the ſuppuration was ſlower in the glandular than in the

cellular ſubſtance, and that there was greater danger of a ſcirrhous hardneſs remaining.

But if an inflammation ſeized both the cellular and glandular ſubſtance of the breaſt, then the breaſt ſwells unequally. In ſome places it is harder than in others, and the ſuppuration is ſooner affected in the cellular part; whence the abſceſs often burſts ſpontaneouſly, and diſcharges good pus, while the hard tubercles ſtill remain, which afterwards inſenſibly come to maturity.

It ſometimes happens, that although the abſceſs has been treated with the utmoſt ſkill, there remains ſomething hard: this happens chiefly when the abſceſs is ſeated in the glandular parts of the breaſt. The ſteam of warm water, gentle friction, and the reſolvent fomentations already recommended, ſhould be conſtantly applied, till the whole is diſperſed; for the longer the hardneſs remains, it will be the more difficult to remove. When this hardneſs would neither yield to fomentations or plaſters, *Nannoni* applied mercurial ointment, which diſperſed the hardneſs in the ſpace of twenty-three days; yet he acknowledges that mercurial unction had been uſed, even to a ſalivation, to diſperſe a hardneſs of two years ſtanding, without any ſucceſs.

APH. MCCCXXXVIII.

PAINS of the nipples, fiſſures, and inflammations are removed by very mild balſamics, and by ſpirituous cephalics.

Sometimes peeviſh children, by frequently ſucking, and ſtrongly preſſing the nipples between their gums, cauſe pain and inflammation in the nipples, which are alſo increaſed by the acid ſaliva of the child. Spirituous remedies are generally recommended

mended in fiſſures or chops in the nipples, and the ſpirit of roſemary is directed in the *Materia Medica*; but it is evident, that if they be much chopped, excoriated, or inflamed, theſe remedies muſt greatly increaſe the pain. They may be of uſe when the nipple is ſtill whole, and not inflamed; but the ſofteſt remedies are moſt proper, ſuch as thoſe enumerated in the *Materia Medica* under the preſent aphoriſm, when the nipple is already chopped, and very painful. The oil of wax made clear and mild by repeated diſtillations is an incomparable remedy in this caſe, as well as for chops in the fingers and hands occaſioned by the cold of the winter.

APH. MCCCXXXIX.

MILK that is too plentiful and too thin, is corrected by mild and dry food, and by exerciſe. When it is deficient, it is reſtored by a moiſt, mild, and nouriſhing diet, by fomenting and rubbing the breaſt, and by removing the cauſe when diſcovered.

Sometimes ſo great a quantity of thin milk is carried to the breaſts, that the nurſe's body is defrauded of its nouriſhment; whence all the humours grow ſharp, and ſomewhat putrid. There ariſes a thirſt, a ſlight fever, and if this too abundant ſecretion of the milk is not prevented, a true *maraſmus* would follow. It is ſometimes a very difficult matter to compaſs this. Dry food, but mild, of roaſted fleſh, pulſe made of barley, oats, and rice, made ſomewhat thick, and exerciſe are very beneficial. The drink ſhould be ſparing, but a little ſtrong. A good mild ale is of ſervice to thoſe who are uſed to malt liquor. If, upon trying theſe, the milk is not diminiſhed, the child ſhould be weaned; otherwiſe

the nurſe muſt ſoon periſh. I have known a troubleſome dropping of milk from the breaſts continue for many weeks after the child had been weaned, which I have cured by drinking a ſtrong infuſion of ſage every three hours, each doſe containing an ounce or two. This has ſucceeded when all other remedies have failed. But when the milk is deficient, a contrary diet is to be directed, namely, ſuch as affords a quantity of good chyle. If evacuations by ſtool, ſweating, &c. be the cauſe, theſe are quickly to be ſtopped.

Of the DISEASES of CHILDREN.

APH. MCCCXL.

A Child juſt born is ſubject to diſeaſes peculiar to itſelf, ariſing, 1. From a glutinous, cheeſy, and viſcid filth, with which the mouth, gullet, ſtomach and inteſtines are filled.

Having treated of the diſeaſes of virgins and pregnant women, and alſo of difficult deliveries, and the diſorders of child-bed, we come next to treat of thoſe peculiar to infants.

A child juſt born ſuffers a conſiderable change. It was a little before incloſed in its mother's womb, defended by a circumambient fluid from all compreſſion, and ſecured againſt all the effects of the air. At its birth, it ſuffers new uneaſineſs from the air to which it was unuſed, and ſometimes from the rough treatment of the midwife. But what a change does it ſuffer in the internal parts! the lungs, which before received only a ſmall quantity of blood, now tranſmit

tranſmit that of the whole body, and pour it into the left ventricle of the heart. The diaphragma, while it acts, enlarges the cavity of the thorax, preſſes down the liver, and in the liver itſelf there is a new circulation of the humours.

When the child is born, it is ſtill tied to the placenta by the umbilical chord. This connection ſhould be diſſolved; for hitherto it partook of one common life with the mother; but as ſoon as the navel-ſtring is cut, it has nothing in common with its mother, but lives a life of its own. For this reaſon, *Levret* has judiciouſly adviſed neither to bind or cut the navel-ſtring, except the child has firſt breathed.

But if the child ſhould have a ſwelled pale face, and ſhould not breathe, or breathe but little, the navel-ſtring ſhould be immediately cut, though not tied, that a certain quantity of blood may be diſcharged, in order to relieve the lungs now loaded with blood, and not yet dilated by a free reſpiration, otherwiſe there would be danger of ſuffocation. But as ſoon as the child begins to cry, the navel-ſtring is to be tied.

Sometimes, eſpecially in difficult labours, tumours appear in the hind part of the head, which are generally removed by diſcutient applications. *Levret*, however, obſerves, that children who have ſuch tumours ſeldom live long, but generally die convulſed, and that tumours in other parts of the head are not attended with the like danger. If the ſutures are too far diſtant from each other, there is reaſon to apprehend ſome fatal conſequence; for either the bones are not ſufficiently formed, or lymph collected in the cavity of the ſkull, threatens a *hydrocephalus*.

The body of an infant juſt born, is covered with a ſlippery glue, which is often very thick. But a glue of a like kind is found in the mouth, the gullet, the ſtomach, and the inteſtines, which comes ſpontaneouſly,

ouſly, not only out of the noſtrils of new-born infants, but alſo out of their mouth.

APH. MCCCXLI.

FROM which cauſe alone are produced nauſeas, vomitings, gripes, hiccups, and convulſions; and theſe are followed by indigeſtion of the aliments.

It is obvious enough, that this glutinous matter ought to be carried off; for by its retention, the action of all the abdominal viſcera would be diſturbed.

APH. MCCCXLII.

DISORDERS from this cauſe are eaſily cured by faſting ten or twelve hours; by giving a little wine mixed with honey in ſmall doſes during this time of abſtinence; or by adding to it the moſt gentle ſtimulating purgative.

Remedies proper in this caſe, are enumerated in the *Materia Medica*, under the preſent aphoriſm.

APH. MCCCXLIII.

BUT epithems moderately aromatic and ſpirituous, are often of great ſervice in waſhing away this load of mucous phlegm.

Theſe are uſeful chiefly when the infant is weak, and all its motions appear languid. Forms of ſuch epithems are given in the *Materia Medica*.

APH.

APH. MCCCXLIV.

INFANTS generally ſuffer a great deal, when the *meconium* is not ſoon enough diſcharged, either on account of their weakneſs, the hardneſs of the matter, its quantity, or the dryneſs of the inteſtines.

APH. MCCCXLV.

FROM a retention of the *meconium*, and the admiſſion of air, it becomes acrid, acid, putrid, and is reſolved into vapours; hence ariſe gripes, convulſions, nauſeas, vomitings, hiccups, coughs, ſneezings, cryings, weepings, watchings, frights, fevers, waſtings, and at laſt death.

I have often obſerved, that the *meconium* which is voided immediately after birth, has no bad ſmell; but if it be left a few hours upon the clouts, it ſometimes turns ſour, at other times putrid, as the acid or putrid particles prevail. For feculencies collected in the inteſtines of the fœtus, either from bile, the gaſtric, or pancreatic juice, &c. being animal productions, rather tend to putrefaction.

Putrid and fermenting humours ſupply matter for eructations and flatus. Air freed from theſe humours, diſtends the ſtomach and inteſtines, and wandering freely through them, is either expelled upwards by belches, or downwards by flatus. But if there be alſo ſome irritating matter, by which the fibres are conſtringed, ſo as to obſtruct the free paſſage of theſe flatulencies, there will ariſe intolerable pains

pains and anxieties, which ſoon ceaſe upon breaking wind, and return again, if the cauſe be not removed. See Aph. 646, and 647.

Infants, when they are well, are almoſt always aſleep; if they are in pain, always awake. When they break wind, the pain ceaſes, and they ſoon go to ſleep again: the pain returning, they ſtart as if they were terrified, univerſal convulſions follow, which often prove fatal. If they ſurvive theſe, they are ſoon emaciated, if the *meconium* is not carried off. I have known infants who were fat at their birth, become lean in the ſpace of three days.

APH. MCCCXLVI.

THE expelling force, when languid, is increaſed by a gentle ſtimulating purge, a mild ſuppoſitary, and by a very grateful and gentle cordial.

The expelling force is languid, if the child makes no efforts to procure a ſtool, or very weak ones only. A gently ſtimulating purge is here neceſſary. Rhubarb, and all its preparations are ſufficient. Suppoſitaries are uſed for the ſame purpoſe, which either by their bulk, or ſtimulus, irritate the *rectum* to expel the *meconium*. Proper forms are given in the *Materia Medica* under the preſent aphoriſm.

Grateful cordials are alſo proper when the infant is weak, forms of which are to be met with in the *Materia Medica*.—If the ſtools are yellow, or, when left upon the clouts, turn greeniſh in a few hours, we then know that the meconium is voided. Sometimes green bilious ſtools are diſcharged after the meconium is evacuated: for *Monro* has well remarked, that the gall-bladder in infants generally abounds with a green acid bile, which, for want of

a free reſpiration, and from the glutinous matter that lines the inteſtines, cannot eaſily flow into them. This is the reaſon why the gripes continue after the *meconium* is voided, a conſiderable quantity of this bile paſſing through the inteſtines. The ſame remedies are to be continued, till ſoft yellow excrements are diſcharged without any pain; for it is better that in infants, the belly ſhould be lax, than too much bound.

APH. MCCCXLVII.

THE hardneſs of the *meconium* is corrected by a draught of freſh whey, with a little honey diſſolved in it, or by a whey clyſter with honey or ſoap.

The mother's firſt milk is the beſt remedy here.

APH. MCCCXLVIII.

THE inteſtines are lubricated by giving linſeed oil, oil of olives, ſweet almonds, &c. and by injecting clyſters of the ſame, and likewiſe by anointing the belly with ſoft liniments.

However, theſe remedies are not to be given in too great a quantity, or for a long time; for they weaken the ſolids, and if they remain long in the ſtomach and inteſtines, they grow rancid, and produce the worſt kind of acrimony. For this reaſon, there is only a ſmall quantity of theſe oils preſcribed in the *Materia Medica*, and theſe mixed with ſyrups, that by the ſaponaceous virtue of the ſugar they may more eaſily mix

mix with the watery humours, and prevented from ſticking to the coats of the inteſtines. For the ſame reaſon, the yolk of an egg, and the *mel mercuriale* are added to the linſeed oil when it is ordered in clyſters. But liniments, though here recommended, cannot ſo directly help to lubricate the inteſtines.

APH. MCCCXLIX.

BY this method, and by theſe medicines, all that variety of bad ſymptoms ariſing from a retention of the meconium (Aph. 1345.) are happily removed.

APH. MCCCL.

BUT if alcaline remedies are uſeful in any diſorders, they are particularly here, eſpecially thoſe of the abſorbent kind.

See Aph. 66. where we treated of ſpontaneous diſeaſes ariſing from an acid humour.

APH. MCCCLI.

OPIATES are rarely to be given, and then with the greateſt caution.

The cuſtom of giving opiates to infants has greatly prevailed among the lower claſs of people. Theſe indeed obtund the ſenſe of pain, but do not remove the cauſe of it, which ſtill continues to act, and may deſtroy the infant. If the inteſtines are ſtimulated by a retention of the *meconium*, it ought to be evacuated.—If pains ariſe from an acid acrimony, it ſhould be

be corrected by abſorbents. But as a lax body is of ſervice in this firſt ſtage of life, both to evacuate the *meconium*, and expel the bile, opiates are pernicious.

APH. MCCCLII.

BUT we muſt alſo avoid all remedies that are too attenuating, ſtimulating, or volatile.

For the tender viſcera of infants can bear nothing that is acrid, or irritating.

APH. MCCCLIII.

BUT a remedy is eaſily found for the diſorders enumerated at Aph. 1345, provided we know the hiſtory and cure of all the diſeaſes hitherto deſcribed.

APH. MCCCLIV.

INFANTS alſo ſuffer a great deal from the milk itſelf, when it is too ſoon and ſtrongly coagulated in the ſtomach, and compreſſed into one heavy and acrid maſs.

Although milk is the natural and beſt nouriſhment for infants, yet when it coagulates in the ſtomach too quickly or too ſtrongly, it may produce very bad conſequences.

APH.

APH. MCCCLV.

FOR this coagulated maſs gradually becoming more acrid and ſour, renders the fæces of a greeniſh colour, and acid ſmell, and the matter thrown up by vomit, acid; hence ariſe gripes, flatus, pains, and many other bad diſorders, eſpecially convulſions.

APH. MCCCLVI.

THESE diſorders are cured by fixed antacids mixed with purgatives, by clyſters of the ſame kind, gentle carminatives, and by oils given internally, and applied externally.

An acid acrimony may be ſafely corrected by abſorbents, but ſuch remedies are likewiſe required as diſſolve this cheeſe-like concretion, and render it fit to paſs eaſily through the *pylorus*, and then through the whole tract of the inteſtines. But as the concretion of the cheeſy maſs is increaſed by the acid, fixed antacids, namely, alcaline ſalts have been recommended, both for deſtroying the acid, and for diſſolving the concretion already formed by it. For this reaſon *Hoffman* highly recommends the uſe of abſorbent powders, impregnated with oil of tartar per deliquium, and mixed with an equal proportion of rhubarb, and a drop or two of aniſeed oil, or that of fennel. *Boerhaave* has proved by experiments, that if oil of tartar be mixed with milk, it will be coagulated, and turn into maſſes not very hard, nor eaſily hardened by an acid. Beſides, "if I mix an "alcali with milk coagulated with an acid, or with "runnet, and ſtill remaining hot, this does not, you "ſee,

" ſee, as is generally aſſerted, reduce the curd again " to its former fluid ſtate; ſo that alcalis do not al- " ways reſolve thoſe ſubſtances that are coagulated " by acids." Therefore as fixed alcalis have a conſiderable acrimony, and yet do not reſolve ſubſtances coagulated by acids, phyſicians have rather choſen to correct the acid acrimony by the uſe of abſorbents, giving at the ſame time ſuch remedies as have the power of reſolving the coagulated maſs.

The remedies for this intention are chiefly *bile*, the *yolk of an egg*, and *ſoap*. Bile, if it be good, and the quantity ſufficient, reſolves milk coagulated in the ſtomach of an infant, whilſt it is mixed with it in the duodenum. The yolk of an egg renders oils and native balſams miſcible with water, and even deſtroys the tenacity of roſins. For this reaſon, it is preſcribed for reſolving coagulations of milk; at the ſame time it has no acrimony, and affords mild nouriſhment. Soap prevents the coagulation of chyle or milk, by an acid, nay, when they are actually curdled by it, it will reſolve them again, which alkaline ſalts alone cannot effect. In fine, " ſoap can do that which neither water nor oil can " do ſeparately, and does thoſe things ſafely, which " alcalis cannot without danger, and which other " ſalts cannot do at all." Forms of all theſe different remedies are given in the *Materia Medica*.

Gentle carminatives alone may be of great ſervice; for by correcting or removing the irritating cauſe, the flatulency ceaſes. When an acid acrimony predominates in infants, it will be neceſſary to regulate the diet of the nurſe.

APH.

APH. MCCCLVII.

FROM this cauſe epileptic fits generally ariſe, the whole nervous ſyſtem being irritated by this vellicating acrimony.

In infants the head is very big, the whole body ſoft, the nerves very tender, and therefore liable to be affected by very ſlight cauſes: no wonder then that the nervous ſyſtem ſhould be irritated by an acid acrimony, and fits of an epilepſy follow.

APH. MCCCLVIII.

HENCE, if the epileptic fits admit of a cure, they are to be cured only by the remedies above mentioned.

APH. MCCCLIX.

AS ſoon as children have ſurmounted all theſe diſorders, and begin to live upon crude aliments, ripe fruits, fleſh, cheeſe, and the like, they begin to be troubled with worms.

APH. MCCCLX.

WORMS are produced from the eggs of inſects that live in the air, or upon the earth, taken into the ſtomach, and incapable of being deſtroyed by the languid action of the ſtomach in children.

It is not ſo very extraordinary that worms ſhould be found in the ſtomach and inteſtines; but it is wonderful to find them in other parts of the body, to which we are certain there is not an eaſy paſſage. *Ruyſch* found worms not only in the liver, in the cyſtic duct, in the porus biliarius, &c. but in the kidneys, in the arteries of living horſes, and even in the brain. *Du Verney* tells us of a child five years old, who had a worm in the *ſinus longitudinalis* of the brain about five thumbs breadth long, and like an earth worm. *Baglivi* tells us of a man, in whom a worm was found in the cavity of the pericardium, hairy, alive, and almoſt the length of the palm of the hand.

APH. MCCCLXI.

THE inteſtinal or gaſtric mucus affords them a *nidus*, where they ſtick, are nouriſhed, breed more, and grow larger.

The ſtomach and inteſtines are covered with a glutinous matter, by which their internal ſurface is lubricated, and defended from all acrimony. This matter may afford a convenient *nidus*, in which they may breed, and to which they ſtick, ſo as not to be diſlodged by the periſtaltic motion of the inteſtines.

APH. MCCCLXII.

FOR this reaſon, worms are not commonly found in adults, unleſs they are of a heavy and leucophelgmatic conſtitution.

For in adults the bile and all the humours which flow into the ſtomach are more acrid than in young perſons; hence they are leſs frequently troubled with

worms, except they abound with cold pituitous humours. See what has been ſaid at Aph. 69, & ſeq. upon the *gluten ſpontaneum*.

At the ſame time it is certain, that all adults, let their conſtitution be ever ſo good, are not exempt from worms, though they do not feel the pains and uneaſineſs from them which young perſons do. At *Beziers*, in the year 1730, perſons of every ſex, age, and conſtitution were afflicted with worms, and that to ſuch a degree, that ſome died, though the moſt effectual medicines were adminiſtered. Soldiers in camps, ill of the bloody flux, intermitting or remitting fevers, have been troubled with ſmooth worms, which would not have been expelled, if they had not been attacked with theſe diſorders. Beſides, the *tænia*, or broad worm, is frequently obſerved in grown perſons.

APH. MCCCLXIII.

WORMS are either round, flat and broad, or very ſmall, which are called *aſcarides*.

Theſe three ſorts of worms are commonly found in the ſtomach and inteſtines, though it cannot be denied that other ſorts of inſects have been found in theſe parts. The *round*, called *ſmooth* alſo, are oftener found in the inteſtines than other human worms; but as in their external form, they reſemble earth-worms, many writers have been of opinion, that the round worms are produced from the eggs of earth-worms taken into the body. This opinion they found on their common form, habitation, life, fecundity, &c.—Their fecundity is much the ſame, but their habitation and manner of living are very different. Earth-worms reſide in the earth,—they feed upon the earth, which is alſo found in their bowels,

bowels, and diſcharged by the belly. Human worms lodge in the inteſtines, and live upon very different food. Earth-worms have red blood, and *Swammerdam* diſcovered in them feet, or ſomething analogous to feet.—*Tyſon* diſſected the round human worms, and found them entirely different from earth-worms. But round worms generally equal a writing pen in thickneſs, ſeldom exceed that ſize, and ſometimes they are ſmaller.—Their length varies, but rather exceeds a foot.

The *broad*, are likewiſe called *tæniæ*, or belly-worms, from their flat figure, and length, which is often immenſe. It is alſo called *vermis ſolitarius*, becauſe it is thought to be always alone, and through the whole length of the inteſtines. This was the opinion of *Hippocrates*, who likewiſe maintained that the *tænia*, or broad worm in a child, was generated while it was in the womb.

This wonderful animal has greatly exerciſed the ſagacity of philoſophers. Some have aſſerted, that it is not a ſingle, but a heap of animals; others, that it was only a chain of *cucurbitine* worms. But if the *broad worm* be compoſed of cucurbitine worms ſingly joined together, or concreted into one animal, it ought in its whole length to conſiſt of homogeneous parts.

Aſcarides are ſmall worms generated in the lower part of the *inteſtinum rectum*. They are ſmooth, very little, and pointed at both ends. Sometimes they are in great numbers about the extremity of the *rectum*, and come away with the fæces. They are moſt troubleſome towards the evening.—*Bianchi* ſpeaks of a friend of his, who from nine to ten at night, was for many years ſo troubled with the titillation of the aſcarides, that he could do no buſineſs at that time. At other times he was entirely free from this torment.

APH. MCCCLXIV.

WORMS, by their irritation, occaſion nauſeas, vomitings, fluxes, faintings, a ſmall, deficient, and intermitting pulſe, an itching at the noſe, and epileptic fits.

Nauſeas, vomitings.] For it was proved at Aph. 652, that the proximate cauſe of theſe was a convulſion of the muſcular fibres of the fauces, œſophagus, ſtomach, inteſtines, &c. and the remote cauſe whatever ſtimulates theſe muſcular fibres, or vellicates the viſcera. If a feather moved in the fauces, or an inert glue fluctuating in the ſtomach, may produce a naulea and vomiting, worms creeping through the ſtomach and inteſtines muſt by their irritation ſooner occaſion theſe ſymptoms. For the ſame reaſon thoſe who are troubled with worms, ſwell immediately after eating.

Fluxes.] For worms, by their creeping, act as ſtimuli; beſides, they diſturb the natural periſtaltic motion of the inteſtines, and if they be very numerous, many of them die, and putrify in the inteſtines; hence there ariſes a new cauſe of the flux.

Faintings.] It has been already obſerved, that the motion of the heart is diſturbed when the ſtomach is affected.

A ſmall, deficient, &c.] Such pulſes generally precede faintings, and ſhew that the vital powers begin to fail.

An itching at the noſe.] The pituitary membrane which inveſts the internal parts of the noſtrils, ſeems to be continued through the pharynx, the œſophagus, and perhaps further. All theſe parts are moiſtened with a mucus ſecreted from the arteries, and a ſimilar mucus lubricates the ſurface of the ſtomach and inteſtines. The pituitary membrane is

alſo continued to theſe parts, by which a ſoft mucus is ſeparated. Therefore when worms creep in the ſtomach and inteſtines, it will not appear ſurpriſing that the noſtrils ſhould be ſlightly irritated, as a great number of nerves are diſtributed through them, and thoſe ſo ſenſible as to be affected by the ſmalleſt effluvia of odoriferous ſubſtances, which eſcape the perception of every other ſenſe. It is even known to nurſes, that children troubled with worms are perpetually rubbing their noſe.

Epileptic fits.] That worms have been the cauſe of epileptic fits, and the moſt violent convulſions, is confirmed by many obſervations.

APH. MCCCLXV.

WORMS, by conſuming the chyle, occaſion hunger, paleneſs, weakneſs, coſtiveneſs; hence a ſwelling of the belly, eructations, and borborygmi.

APH. MCCCLXVI.

THEY often perforate the inteſtines themſelves.

APH. MCCCLXVII.

WHICH is the cauſe of their proving frequently mortal.

APH. MCCCLXVIII.

WORMS are diſcovered from the age, the diet, and the conſtitution of the patient, and from the effects enumerated at Aph. 1364 to 1366.

Before we treat of the method of curing worms, it will be neceſſary to conſider thoſe ſymptoms which ſhew that there are worms in the body, leſt anthelminthics ſhould be adminiſtered, when the ſymptoms ariſe from other cauſes. If worms are voided, and the ſame ſymptoms continue, or grow worſe, we may ſafely conclude, that more lie hid in the body. But when no worms have been voided, and there is, notwithſtanding, room to ſuſpect that there are worms, then every particular ſhould be carefully examined, in order to find out a true diagnoſis.

Age.] Young perſons are moſt troubled with worms; hence worms are reckoned amongſt the diſeaſes of children. Voracious perſons, whether young or old, are often afflicted with worms.

Diet.] *Jacquin* obſerved, that thoſe who eat a great deal of unripe fruit, and who live much upon fiſh and ſalt meat, are more frequently troubled with worms, than thoſe who live upon a better diet. For this reaſon, the children of poor people are oftener afflicted with worms and ſwelled bellies than others.

Conſtitution.] Namely, if it be lax and phlegmatic; for in ſuch habits, all the corporeal functions are feebly exerted.

Effects.] Theſe have been enumerated in the aphoriſms cited in the text.

But worms ſometimes attend epidemic diſeaſes. The epidemic diſeaſe that prevailed at the firſt ſiege of *Buda*, was attended with worms. The ſame has been obſerved in armies, and after great inundations,

as

as appears from obſervations collected by *Van Doeveren*. *Hippocrates* gives us the hiſtory of a fever attended with worms, which proved fatal on the eleventh day. Epidem. lib. i. ægrot. 2. In the ſpring of the year 1763, I had more poor people's children to cure of worms than in other years In autumn people are more apt to be troubled with worms than at any other time of the year. *Hippocrates* obſerved the ſame thing, which is likewiſe confirmed by the obſervations of *Raulin*.

Other ſymptoms of worms have been obſerved by authors. *Jacotius* ſays, that when children in their ſleep feel themſelves bit by worms, they immediately make "a motion with the maſticatory muſcles expreſſive of what paſſes in their imagination." Others add a particular ſort of ſmell, which cannot be deſcribed, a ſobbing, ſtarting during ſleep, the noſe white like wax, and ſudden changes of colour in the face. Dr. *Alex. Monro* has added another ſign, namely, a dilatation of the pupil. This ſymptom he founds upon the union of the eighth pair of nerves with the intercoſtal nerve. For if the intercoſtal nerve be cut in a dog, the eyes grow dim, loſe their luſtre, become hollow, and the pupil contracted. Whence he concludes, that the intercoſtal nerve ſerves to dilate the pupil, and that its action is increaſed by an irritation of the nerves of the ſtomach and inteſtines.

In a true *gutta ſerena*, the pupil is greatly dilated, the eyes appear bright, and as it were ſparkling. *Jacquin*, while he reſided in *America*, obſerved that the inhabitants were frequently afflicted with worms, attended with a drowſineſs, gripes, bright eyes, but a little yellowiſh; that the lower eye-lid was yellowiſh or bluiſh, and that they were often ſeized with convulſions, which were quickly fatal. Thus the opinion of the celebrated *Monro* is greatly confirmed.

Sometimes there are many ſymptoms of worms, though there are none in the body. *St. Clair*, a celelebrated profeſſor at *Edinburgh*, gives us the caſe of

a child four years old, who was afflicted with pains in the ſtomach, and many other ſymptoms of worms; yet, upon a careful examination of the ſtomach and inteſtines, no worms were found, but only a kind of gelatinous ſubſtance near the beginning of the *jejunum*.

APH. MCCCLXIX.

WORMS are deſtroyed, 1. By carrying off the ſlime in which they neſtle, by fixed alcalis, by gums which purge phlegm, by mercurials, antimonials, and aromatic bitters.

We have already ſpoken of the phlegm in which worms neſtle; but there is a ſort of ſlimy mucus which lubricates the internal ſurface of the inteſtines, that may ſometimes be increaſed, and afford a commodious habitation to worms. Beſides, there ſeems to be ſecreted from the body of the worm a conſiderable quantity of a viſcid humour, with which it is covered on every ſide, in order to defend it from the acrimony of the *ingeſta*. This mucus, when it exceeds in quantity, is thrown off, and a new mucus is ſecreted for the ſame uſes. Hence thoſe who are troubled with worms, frequently void ſlimy excrements.

The method of curing this gluten in the *primæ viæ* was treated of at Aph. 75, where we conſidered thoſe diſeaſes ariſing from a ſpontaneous glue. Bitters, ſaponaceous reſolvents, the aromatic ſtimulating gums, which at the ſame time purge, fixed alkalis, gentle mercurials, and ſtrengthening aromatics are here chiefly of uſe, forms of which are given in the *Materia Medica* under this aphoriſm.

APH.

APH. MCCCLXX.

AND likewiſe by externally anointing the abdomen with the ſtrongeſt aromatic balſams, mixed with purgative and oleous ingredients.

The unguentum *Agrippæ*, and that compoſed of *arthanita* or *ſowbreaa*, are generally uſed here. In the *Materia Medica* there is another preſcription, which has no purging ingredient in it, the efficacy of which is chiefly owing to the aromatic fragrancy of the tanſic.

APH. MCCCLXXI.

2. BY killing the worms, which is done by medicines prepared with honey, ſalts, and ſuch things as the worms cannot digeſt; by bitter aromatics, mercurials, acids, and by vitriol impregnated with ſteel or copper.

Honey.] It is univerſally agreed, that there is a reſolving power in honey, and may therefore be of ſervice in diſſolving and thinning the mucus. But it is not quite clear whether honey itſelf is deſtructive of worms. It is certain, that the ancient phyſicians directed *mulſe* for perſons troubled with worms; but they maintained that honey was converted into bile in the human body, eſpecially if the patient be of a hot conſtitution. The modern phyſicians have been of opinion, that honey taken in large quantities deſtroys worms, becauſe it may ſhut the air-pipes deſcribed by *Malpighi* in the ſilk-worm. But theſe pipes have not yet been diſcovered in human worms, and

and perhaps they do not breathe. For the ſame reaſon, oil is recommended, if given in large quantities, ſo as to fill the inteſtines.

Salts.] It ſcarce admits of a doubt, that ſalts, eſpecially the ſharper ſort, taken in great quantities, may be deſtructive of worms. The *Sedly* and *Ebſham* ſalts are chiefly recommended by phyſicians for this intention.

Such things as the worms cannot digeſt.] As worms ſeem to be chiefly nouriſhed by chyle, it is hardly poſſible to give ſuch remedies as can hurt them in this way.

Worm-medicines may be properly divided into three claſſes. Thoſe of the firſt are rough and rugged. The ſecond contains ſuch remedies as diffuſe a moſt diſagreeable and penetrating ſmell through the whole *primæ viæ*. The third are ſuch as, though they neither hurt by their roughneſs or bad ſmell, yet have been found by experience deſtructive of worms.

To the firſt claſs belongs that remedy preſcribed by the celebrated *Mead*, conſiſting of *tin* and prepared *coral*; equal quantities of which are to be reduced into a fine powder, and made into a bolus with conſerve of ſea-wormwood, and taken twice a day. *Alſton* gave pure tin in a much larger doſe, even an ounce in the morning, mixed up with treacle. But though tin may be in many ways deſtructive to worms, yet it chiefly acts by getting between the coats of the ſtomach and inteſtines, and the worms; ſo that when a purge is afterwards given, they are eaſily expelled. Other rough powders have been tried for the ſame purpoſe. *Geſner* preſcribed pounded, but not ſifted coral, to deſtroy worms.

To the ſecond claſs belongs *garlick*, as it diffuſes a very ſtrong penetrating ſmell, dangerous to worms, and alſo increaſes the motion of the inteſtinal fibres, by which worms are prevented from ſticking to their ſides, and thus more eaſily expelled by purges. For this

this reaſon, *aſſa fœtida* is recommended, which has a much worſe ſmell than garlick. *Hoffman*'s ſpecific for worms conſiſted of aſſa fœtida, myrrh, ſaffron, and ſweet mercury. The valerian root freſh powdered belongs to this claſs. *Marchant*, who made trial of this root to cure the epilepſy, obſerved, that it likewiſe expelled worms. *Stork*, famous for his invention of new remedies, joined purgatives and aromatics to valerian, with great ſucceſs. The *caput mortuum* of hart's-horn is alſo greatly commended as an excellent anthelminthic, as it is fetid, bitter, and ſtill contains a thick, tenacious, pitchy oil. Perhaps *ſulphur* may likewiſe be added to this claſs, which, "if taken crude into the human body, in a "ſmall doſe, but frequently repeated, purges the "primæ viæ.—It efficaciouſly cures ſome cutaneous "diſeaſes, as well as diſeaſes ariſing from worms, "and mercury." May not ſulphur, by its diſagreeable ſmell, be noxious to worms?

To the third claſs belong all thoſe remedies which prove deſtructive to worms, though they have neither roughneſs of parts, or a bad ſmell. *Galen* ſays, that the "buds and leaves of the *peach-tree* have a "bitter binding quality, and that its leaves bruiſed, "and applied to the navel, kill worms." *Boulduc* obſerves, that an infuſion of the buds of ſoft leaves of the peach-tree have a gentle purgative quality, and commends it as an excellent remedy for worms in children.—*Galen* has likewiſe obſerved of fern, "that its root kills the broad worm, if one drinks four "drams of it in water and honey." The obſervations of the celebrated *Marchant* confirm the opinion of *Galen*; for he declares that it is a wonderful and ſure remedy for all ſorts of worms. It is probable that the worm-medicine, which Andry kept as a ſecret, was prepared from *fern-root*.

Bitter aromatics.] Though theſe may ſtrengthen the chylopoietic viſcera, and mend a cachectic habit, which favours the generation of worms; yet it is not quite

quite clear that bitters are ſo fatal to worms. For worms have been found in the duodenum, in the liver, where the bile is formed, and even in the gall-bladder. Earth-worms as well as human, live a long time in bitter decoctions.

Mercurials.] As quickſilver diſſolved in any fat ſubſtance has been of ſervice in deſtroying worms in the ſkin, it has been thence inferred, that it might be of ſervice in deſtroying worms in the inteſtines. But it is not altogether certain that quickſilver is ſo fatal to worms. *Scopoli* has obſerved, that worms in the inteſtines are no where more frequent, than near mines of quickſilver. *Helmont* affirms, that quick-ſilver boiled in water deſtroys worms in the inteſtines; and experiments have been made to diſcover whether quickſilver communicates any thing to pure water, either by infuſion, chymical digeſtion, or by boiling, and it was concluded that it loſt nothing. Yet we muſt own that there are remedies, which, without any ſenſible loſs, communicate their medicinal powers to the liquids in which they are infuſed, as the *vitrum* and regulus antimonii. However, it will appear in the following aphoriſm, that preparations of mercury expel worms out of the human body.

Acids.] It is very certain that ſtrong and corroding acids hurt worms; but the ſtomach and inteſtines cannot bear ſuch remedies, except they are diluted in a great quantity of water, and then they loſe much of their anthelminthic power. *Van Doeveren* obſerves, that vinegar quickly deſtroys earth-worms, and gives a kind of livelineſs to human worms. *Torti* obſerved the ſame of earth-worms; but a ſmooth worm taken out of a calf lived ſix hours in vinegar before it died. *Amatus* has a worm-powder, to which he aſcribes great efficacy. It conſiſts of two parts of *ſea-moſs*, and *worm-ſeed*, and one part of *white dittany*, *biſtort*, and *tormentil-roots*. Theſe reduced to a powder, were moiſtened with ſharp vinegar, and then dried in the ſhade. The

doſe

doſe is from one to three drams. *Boerhaave* compoſed a medicine of aloes, ſaffron, myrrh, and vinegar, which he highly commends where a putrid matter, a fetid bile, or worms infeſt the *primæ viæ*. See his Chemiſtry, vol. ii. proceſs 81. The doſe is from one to three drams, taken in mead, honey and water, or any ſweet wine, in the morning faſting. I have often known this medicine highly beneficial.

Vitriol impregnated with ſteel.] Thus if the filings of iron be diſſolved in oil of vitriol diluted with water, the vitriolum martis of the ſhops is prepared. If a dram of this be diſſolved in a pound of pure water, and drank upon an empty ſtomach, "it opens, "relaxes, purges, promotes urine, deſtroys worms, "and brings them away," &c. See proceſs 162. But iron diſſolved in a vegetable acid, furniſhes a milder remedy, and equally efficacious.

Or copper.] All remedies prepared from copper are to be uſed with great caution.

APH. MCCCLXXII.

3. BY expelling the worms both living and dead, by bitter purgatives, by phlegmagogues, and mercurials.

In the *Materia Medica* there are many forms of purging remedies for young perſons.

APH. MCCCLXXIII.

NOR are clyſters, ſuppoſitories, and ointments externally applied of leſs ſervice.

Proper forms of clyſters and ſuppoſitories are given in the *Materia Medica*.

APH.

APH. MCCCLXXIV.

WHEN the teeth are cutting, eſpecially the *inciſorii*, or fore-teeth, there ariſes an inflammation, ſwelling, gangrene, convulſion, green ſtools, a ſalivation, a fever, and even death, from the tenſion, puncture, and laceration of the gums, which are furniſhed with a number of nerves and blood-veſſels.

Though the cutting of teeth be natural, and happens in many children without much uneaſineſs, yet, in ſome, it is attended with very dangerous ſymptoms, which are ſometimes attributed to other diſeaſes, although they proceed from teething alone. It will be therefore worth our while to conſider thoſe ſymptoms which ſhew that children are breeding of teeth.

Hippocrates reckons "an itching and pricking of "the gums, fevers, convulſions, and looſeneſſes, as "ſigns of teeth-breeding, eſpecially when the eye-"teeth are cutting, and that theſe chiefly happen to "groſs children, and to thoſe who are coſtive." *Harris* obſerves, that the external and upper part of the gum is ſurrounded with a whitiſh circle. At the ſame time there is a greater diſcharge of ſpittle than uſual, and ſometimes a cough, and a running at the noſe.

As all theſe diſorders ariſe from a tenſion, and laceration of the nerves and blood-veſſels of the gums, it is evident that theſe dangerous ſymptoms are more to be feared when the eye-teeth are cutting, as they have an obtuſe point, and are pretty thick. The *inciſorii*, or fore-teeth, are like a wedge, and more eaſily cut the incumbent membrane. But the *molares*,

lares, or grinders, though they have a larger ſurface, and four tops, are more eaſily cut, becauſe their points do not come out all at once, but ſucceſſively. If the gum ſwells, and is, at the ſame time, very red, it is a ſign of a violent inflammation, which ſometimes terminates in a gangrene, eſpecially if the humours are acrid. In this caſe, the part affected ſhould be often touched with a mixture of ſpirit of ſea-ſalt, and honey of roſes, in order to ſtop the ſpreading putrefaction.

Green ſtools at the time of teeth-cutting are dangerous, and are uſually the forerunners of convulſions; but a looſeneſs is rather beneficial.

APH. MCCCLXXV.

ALL which diſorders may be eaſily demonſtrated to ariſe from one and the ſame cauſe.

For the membrane which cloſes and covers the *alveoli* or ſockets of the gums is gradually diſtended, and if there be an inflammation, and the inflamed part be pierced by the hard tooth, the reaſon is obvious why all theſe ſymptoms follow.

APH. MCCCLXXVI.

BUT by removing the irritation of the nerves all theſe ſymptoms ceaſe.

APH. MCCCLXXVII.

WHICH is effected, 1. By ſoftening, cooling, and relaxing the gums with ſoft, glutinous, and antiphlogiſtic remedies. 2. By rubbing them often againſt hard, but ſmooth bodies. 3. By laying them open with a lancet.

1. It was obſerved at Aph. 228, No. 1. that remedies of this kind are of great uſe in alleviating pain, as they ſoften and relax the diſtended fibres. The juice of the greater houſe-leek, ſyrup of violets, with a due proportion of the mucilage of gum arabic, tragacanth, and quince-ſeed, is a very proper remedy in this caſe. The mucilage is added to prevent the mixture from being immediately waſhed away by the quantity of ſaliva which comes out during the time of teeth-cutting. Cream, with the yelk of an egg, ſyrup of violet-flowers, diluted with roſe-water, is highly beneficial. Elder-flowers tied in a bundle, with a little bit of lead to keep them at the bottom, put into a cylindric glaſs veſſel, pouring freſh milk upon them, and chemically digeſted, a cream will ſoon be gathered at the top of the veſſel, which has all the fragrancy of elder-flowers. This cream rubbed upon the gums is a moſt effectual remedy.

But when the gums are greatly inflamed, and in ſuch pain that a violent fever and convulſions follow, *Sydenham* adviſes bleeding as the beſt and ſureſt remedy. *Harris* acknowledges the neceſſity of bleeding, but he thinks leeches applied under the ears more ſafe.

2. If

2. If the inflamed gums are in pain, hard bodies would certainly hurt them. But when this is not the caſe, a gentle preſſure of the gums ſeems to be directed by nature; for children, while they are cutting their teeth, are perpetually rubbing them with their fingers, and put whatever comes in their way into their mouth, and preſs it as ſtrongly as they can between their jaw-bones.

3. Laying the gums open, is only proper when the membrane which covers the *alveolus* or ſocket of the emerging tooth, is red and painful, the fever high, and there is room to fear convulſion fits. *Harris* obſerves, that there are two periods in breeding of teeth; the firſt is, when the tooth makes its firſt effort to riſe out of the jaw-bone; the ſecond, when the tooth endeavours to break through the gum. "In this firſt effort, as well as in the ſecond, "ſurgeons improperly cut the gums of children, "that the teeth may the more eaſily come out. It is in "the ſecond period only that this inciſion ſhould be "made." He moreover adviſes not to make this inciſion with a lancet, as the wound heals too ſoon, but rather with a pen-knife, or other inſtrument whoſe back is almoſt as thick as a razor, for by this the lips of the wound will be more diſtant from one another, and unite more ſlowly. But I have learned from experience that this operation is ſeldom neceſſary, even in the moſt difficult cutting of teeth.

APH. MCCCLXXVIII.

CONVULSIONS, ariſing from dentition, are happily removed by moderate doſes of ſpirit of hart's-horn.

It was obſerved at Aph. 229, that the ſenſe of pain, and many effects of it, may be removed, tho'

the cauſe remains. Hence gentle paregorics, as the ſyrup of red poppies, may be ſafely uſed for this end, provided thoſe things which act upon the cauſe of the pain be not neglected. It appears from the obſervations of *Sydenham*, that three or four drops of ſpirit of hart's-horn is of great ſervice in curing the fever, which attends a difficult cutting of teeth, if given every four hours, for four or ſix times. Such a preſcription is given in the *Materia Medica*, under the preſent aphoriſm.

THE END OF VOL. IV.